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Mining God's Way:
Towards mineral resource justice
with artisanal gold miners in East Africa

Terence William Garde

August 2020

ABSTRACT

The daily livelihood practices of artisanal gold miners have social, economic, environmental, and governance impacts. Three situations were observed in East Africa, where interventions towards improving livelihoods or mitigating these impacts, have resulted in impasses. These impasses are engaged through a four stage model of practical theology. In stage one the situation is described, contrasting present practices with the published standards of ethical and fair trade organisations, intending to improve miners' livelihoods. The second (analytical) stage includes the ordinary theologies, ethics, and practices of Christian miners, as well as the academic research community who are directly involved in this sector or are development and justice theorists. In the third stage, theologians addressing justice, and certain Scriptural characteristics and purposes (ways) of the Christian God, are brought to reflect on these impasses. Formulating more faithful, practices, in stage four, resulted in initial attempts or proposals to overcome these impasses. The thesis is the first to study these impasses through a critical conversation constructed from Christian (theological), social science (theoretical), and technical (practical) points of view.

Through these conversations, the predicaments are interpreted as requiring the intentions, means and ends of social, economic and environmental dimensions of justice that ought to be practised in the situation. Formulating these means and ends will require collaboration between Christians applying practical theologies, using the values of critical holism, development wisdom and intelligent love. The intentions of mining God's way are to please God; through conforming to Biblically revealed, divine ways. The thesis culminates in an understanding of just resource development as the appropriate means for mining God's way, and mineral resource justice under God, as its particular ends in the situation.

The research findings inform present and future Christian mission to promote shalom, through the blessing of mineral resources won by artisan miners.

**‘Mining God’s Way:
Towards mineral resource justice with
artisanal gold miners
in East Africa’**

by

Terence William Garde

B. Sc. Eng. (University of Witwatersrand)

MA (Africa Leadership and Management Academy)

A thesis submitted in partial fulfilment of the degree of

Doctor of Philosophy

Middlesex University

August 2020

Oxford Centre for Mission Studies

DECLARATIONS

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed  (Candidate)
Date 19 August 2020

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote.

Other sources are acknowledged by midnotes or footnotes giving explicit references. A bibliography is appended.

Signed  (Candidate)
Date 19 August 2020

STATEMENT 2

I hereby give consent for my thesis, if approved, to be available for photocopying by the British Library and for Inter-Library Loan, for open access to the Electronic Theses Online Service (EthoS) linked to the British Library, and for the title and summary to be made available to outside organizations.

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DEDICATION

The greatest and completely unrepayable debt I owe is to my good wife Barbara who has borne the struggles, setbacks, set forwards and restarts beyond count over the past years in Oxford. Her loving kindness and generosity throughout our marriage can never be surpassed in our life, so perhaps I can serve her in the new creation.

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LIST OF ABBREVIATIONS, ACRONYMS and THESIS NOTATIONS	
AGC	Artisanal Gold Council
AGM	Artisanal Gold Mining
APT	Appropriate Process Technologies
ARM	Alliance for Responsible Mining
ASGM	Artisanal and Small-scale Gold Mining
ASM	Artisanal and Small-scale Mining
ASMO	Membership-based Artisanal and Small-scale Mining Organisation
CRED	Christian Relief, Education and Development
EESG	Economic, Environmental, Social, Governance
EFT/ O	Ethical and Fair Trading/ Organisation
ESG	Environmental, Social, Governance
EWAD	Environmental Women in Action for Development
FTF	Fairtrade Foundation
HIV/ AIDS	Human immunodeficiency virus/Acquired immunodeficiency syndrome
Ksh	Kenyan Shilling
LBMA	London Bullion Market Association
MEMR	Ministry of Environment and Mineral Resources, Government of Kenya
MGW	Mining God's Way
MICA	Migori County Artisanal (MICA) Mining Co-operative Society
MMSD	Mining, Minerals and Sustainable Development
NAP	National Action Plan
NASB	New American Standard Bible
NIV	New International Version
OCMS	Oxford Centre for Mission Studies
OECD	Organisation for Economic Co-operation and Development
OT	Old Testament
oz	Troy Ounce
PR	Prospecting Right
PT&QR	Practical Theology and Qualitative Research
RMF	Responsible Mining Foundation
RMI	Responsible Mining Index
SADC	Southern African Development Community
SAMA	Syanyonja Artisanal Miners Association
Side A	Shorthand description used in the thesis for parties seeking to intervene in the situation e.g. governmental and non-governmental organisations, the private sector, i.e. not artisanal miners
Side B	Shorthand description used for women and men in East Africa gaining some or all of their livelihood from artisanal gold mining
SMC	Shamva Mining Centre
SSM	Small-scale Mining
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
WCED	World Commission on Environment and Development

Chapter One

Introduction: 'Doing the Rightful Thing'

This study has arisen from a lifetime as a white African Christian mining engineer, whose expertise was won in the operations and economics of the mining industry of Zimbabwe, reflecting on what mining, following God's ways, could look like in practice and as a mission. Being a reflective practitioner sets up a tension between reflection and practice (Schön 1983:69), so too my practical Christianity set up a tension between practice and theology; between mining and God's ways. The concept of 'Mining God's Way' was outlined (Garde 2010) prior to commencing doctoral studies, which then required that the possibility of such an approach be researched further in the field and in the literature. More precisely, the research enquires into the intention, means and ends of mining God's way as mission. To paraphrase Christopher Wright, mission is our participation in the redemption of God's creation (2006:23), which in this study is partially redeeming the human activity of extracting minerals within that creation.

The field research, to find out how mining God's way could be informed by the theologies, ethics and practices of Christian miners, was conducted within the artisanal gold mining sector of East Africa.¹ This type of mining is differentiated from other scales of mining in that the miners are not typically employees or contractors selling their labour, instead minerals are extracted and sold by the miners to generate their livelihood.² The artisanal sector has been identified within the global industry as a

¹ As described in Appendix Two, the fieldwork was predominantly undertaken in Kenya and Uganda, with short times being spent in Tanzania and Zimbabwe investigating the use of mercury in artisanal gold processing.

² 'Something, esp a job, that provides a person with the means to support themselves. Alteration of Middle English *livelode* course of life' (Allen 2007e:748). While 'the means to support themselves' is a clear reference to the economic base of livelihood, this will be reinforced throughout the thesis as economic livelihoods.

micro-scale of mining (Kambani 2000:22) and Ian Smillie claimed that ‘Artisanal mining in Africa, however, is not first and foremost about mining. It is about livelihoods’ (2006:xii). The preferred description used throughout the thesis is economic livelihood, in order to differentiate the work of artisanal gold miners from employment. Peter Alimu, a miner interviewed in Migori County, Kenya helpfully described their livelihood, saying ‘artisanal mining is getting access to the gold ... by knowing what rocks bear it, removing these rocks, processing them and then extracting the gold itself for the market’ (Alimu 2015). This succinct description of the economic livelihood of individual miners in East Africa is more fully described in Appendix One. Briefly, the steps in processing³ include firstly, crushing and milling the gold bearing rocks (ores) using simple, manual or semi-mechanised equipment, followed by washing the ores over sluices which split them into concentrates (trapped in the sluice) or tailings (washed through the sluice, but still contain some gold for retreatment). Thirdly, extracting particles of gold from slurries of crushed rocks, riverbed sand, soils and tailings dumps, through panning and amalgaming the gold particles with mercury. Afterwards, the amalgam is heated to vaporise the mercury, leaving sponge gold for sale to local dealers (the market). As the project is concerned with miners’ livelihoods, enquiry ceases at the first point of selling gold and does not investigate the possible gold trafficking beyond the initial purchase by local gold dealers, who may or may not be licensed.

The primary research also allowed ordinary people to express themselves theologically and ethically; letting them share what they see as important in their daily mining livelihoods and what they see as important to God. Four entities in the situation were deemed as significant by the miners: the gold resource, other species in the local ecology, responsible communities, and the Christian God. For example, a significant

³ Technical mining and processing terms are explained in Appendix One.

extract from the ordinary theology of a Christian woman miner in Uganda (Josephine Aguttu) reads:

He may bless more and more, He is a God of miracles. At places where we don't feel gold can emerge we can wake up one day when we please him and do the rightful thing and use the money that we get of the gold to do things that please him. He is a God who promises to bless us and anything that we keep touching – to see a blessing in our lives. (Aguttu 2017c)

As explored throughout the thesis (and supplying the title to this chapter), Aguttu and other miners have practical concerns over 'doing the rightful thing' which is taken in this thesis to mean the ends (the rightful thing) and means (doing) of pleasing God (the intention of Christian miners). The 'rightful thing' is seemingly required by the assumed presence of the Christian God who is seen to be both proximate and transcendent, who is just, and who is concerned for His creation, including the wellbeing of the community. Pleasing this God, in the situation, can be interpreted through the Biblical concept of shalom, which is the flourishing of all creation under God (Wolterstorff 1995:20) and the appropriateness of shalom, as the end of 'doing the rightful thing' will be investigated throughout the thesis. If livelihoods, derived from artisanal gold mining, can be won in such a way as to promote shalom, what does this mean for the intention, means and ends of mining God's way? The primary research question of this study can simply be stated as 'To what extent can artisanal gold mining in East Africa promote shalom within its locality?'

In more detail, 'It is about shalom in creation, shalom among people (justice), and shalom among the nations (peace). Shalom in the Old Testament sense is always a result of "judging"; shalom may be broken and then restored' (Duchrow & Liedke 1989:115).⁴ The concern of this study then becomes the promotion of flourishing; not only between people (social); but also trading between nations (economic); and between species (environmental), as appropriate for the situation. The link between shalom (as

⁴ The bracketed words are in the original quote, not inserted.

flourishing) and justice – where justice is taken as a quality of being,⁵ a virtue (Aristotle 1975) – guides the research in the quest to promote shalom in the situation. ‘But justice is not only a meritorious character trait. Justice is also a meritorious dimension of social relationships’ (Wolterstorff 1995:15), and he continues, ‘There can be no doubt that justice was seen by the biblical writers as an indispensable component of flourishing in one's social relationships’ (Wolterstorff 1995:20). Further, if justice, like shalom, is seen to promote flourishing of all species in the locality, then the research turns to ask, ‘what is required to promote justice under God within artisanal gold mining livelihoods in East Africa?’

In the pursuit of doing the rightful thing under God, concepts of practical theology have been drawn upon. Swinton and Mowat note that ‘Practical Theology is a fundamentally missiological discipline’ whose aim is ‘not simply to understand the world but also to change it’ (2016:26). They propose a four stage model, where the first stage identifies a practice or a situation that requires reflection or critical challenge (2016:90); such situations are described in later chapters and in Appendix One. The second stage examines sources appropriate for gaining new knowledge about the complex situational dynamics. Thirdly, the model reflects on the implicit and explicit theological dimensions of the information gained (2016:91). One way to assess the need for development is by noting the tension between the ‘is’ (described in Stage One) and the ‘ought’ (described in Stages Two and Three) within the situation observed. The fourth stage draws ‘together the cultural/ contextual analysis with the theological reflection and combine(s) these two dimensions with our original reflections on the situation’ and these ‘enable the initial situation to be transformed into ways that are authentic and faithful’ (2016:92). The need for this model as an approach to

⁵ The quality of being just is ‘acting or being in conformity with what is morally upright or equitable; honest and impartial’. (Allen 2007d:696)

development, using transformative practical theologies, will be demonstrated in the thesis that follows.

The following *vignette* has been selected from the field work journal (Saturday 15th October 2014) as it typifies the present situation observed in Migori, Kenya with respect to the open vapourising of mercury from its amalgamation with gold (explained in Chapter Six) and the subsequent sale of the remaining impure gold to a local dealer:

Joe (not his real name), a founder and executive member of a Migori County Artisanal and Small-scale Mining Organization (ASMO) took me today to Masara Business Centre where he planned to sell four beads of gold amalgamated with mercury. The dealer who is also a fellow artisanal miner sits in a dark storeroom behind two petrol pumps which may or may not be connected to the shop which now stores assorted equipment for the dealer's own mining site. Joe produces four small hard grey beads of amalgam wrapped in plastic and Solomon (not his real name) the dealer produces a long handled pointed container that looks like a spoon with the edges folded over. The beads are dropped into the spoon and the dealer goes to the open back door of the shop where a charcoal fire is burning in a drum the size of a four-litre paint tin. More charcoal is added to the fire and he fans it with an old plastic plate, once hot enough, the spoon is inserted into the red coals and the dealer retreats to join us sitting on his side of a large wooden desk. The fire and spoon remain in view but no effort is made to prevent the mercury fumes from drifting around the store or around the unseen back yard, from where the sound of people can be heard. After five minutes or so the dealer retrieves the spoon, red hot around its pointed base and after it cools tips out the four beads, now yellow in colour as opposed to grey that they were and they cool on his desk for a few minutes more, without apparently burning the wood. Solomon gets a small box containing various weights and a set of hand held balancing scales from a chest of drawers beside the desk. He places the now cool beads into the pan on one side and a five gram weight is put in the other. Solomon also taps out any grains remaining in the spoon and touches the desk top where the beads cooled rubbing his fingers over the pan to add any specks that may have fallen. The gold weighs somewhat less but balance is restored when he adds a 0.4 g weight to the gold side giving its mass as 4.6 g. for which a price of Ksh 2500 is accepted by Joe and Ksh 115000 changes hands.

The beads (now called burnt gold) are placed in a small bag and then into Solomon's pocket and no questions were asked as to what happens to it next. The beads looked the same shape but a smaller size as before heating, and Joe had estimated their weight to be five and a half grams, so he reckons about 1 gram of mercury was burnt off into the air. Joe was happy with the price which, sitting there I calculate to be roughly 70 per cent of the LBMA⁶ gold price of approximately 40 US\$ per gram⁷ of pure gold (bullion); and to me this was not a bad price considering the unknown level of impurities (Garde 2014).

This *vignette* encapsulates two of the major tensions that the thesis investigates. Firstly, what ought to be the economic alternatives to the described gold transaction? Secondly, what alternatives ought to mitigate the environmental and health impacts of the uncontrolled, open burning of mercury described? With the hope of transformation

⁶ The free market price for pure gold is published twice daily by the London Bullion Market Association (LBMA) and this is the 'fix' referred to. <http://www.lbma.org.uk/lbma-gold-price> accessed on 9 March 2020.

⁷ The LBMA fixing is in United States Dollars per troy ounce. On Friday 24 October 2014 the price was 1232.75 \$ per oz or USD39.63 per gram, (converted at 31.1 g per oz) although I had remembered it as 40\$/g. I used an approximate prevailing exchange rate from dollars to Kenyan shillings of 90: 1 giving 40 x 90 = 3600 KSh/g which divided into the agreed 2500 shillings per gram gave a little over 69 per cent.

towards shalom in practice, the research investigated what ought to be done from a variety of perspectives. The thesis documents some of this research, and the information from these analyses enables an understanding of appropriate social, economic and environmental justice (and just approaches to their development), for situations such as the one described above.

The research, to understand the intentions, means and ends of mining God's way, is re-phrased to ask 'what appropriate intentions, means, and ends, of justice can be formulated from the analyses of artisanal gold mining development observed in East Africa?' The thesis is therefore concerned with the intentions, means and ends of justice and these need clarification. Cowen and Shenton analyse these terms with respect to development, using the words intentions, processes and goals. They do not allow conflation of intent, process and goals of development, insisting that when using the word development it should be made explicit which mode of development is under discussion, noting that values implicitly guide all three modes (1996:445). Intention separates development from progress, in that development needs a developer unlike progress which has no need of an intervenor. They note that because development starts with thinking about how to act in such a way as to make development happen, it is intentional; but discussions regarding the origins of these intentions to develop are often omitted (Cowen & Shenton 1996:440). Intentions are thus in the mind of the developer, whether arising within oneself or arising within others, they give rise to what ought to be done; whereas the ends of development are to be found in the situation, tangible results of initial intentions. So too, the intentions of Christian justice as pleasing to the character and purposes (ways) of God; these are Biblical values expressed by believers, guiding the promoters of justice. The ends of justice however, are to be found in the situation; although they may not be empirically measurable, only qualities attributed in relation to former situations i.e. the present is judged to be more or less just than

previously. The thesis accepts that while the intentions to develop justice may be couched in revelation, whether through Scripture or epiphany, the ends of justice are to be realised in the situation and are to be agreed upon by the recipients of such justice.

This collaboration with Christian artisanal gold miners is to include agreeing on the means taken to reach these particular ends. The thesis adopts the notion that the doing of justice (the means) are as important as the intentions and ends: ‘prominent in the Scriptures ... is the theme of doing justice as *constituting (part of) our imaging* of God’ (Wolterstorff 1995:18). The means of doing justice are crucial to Christian witness, and are labelled herein as the approach of ‘just resource development’, requiring their own explicit values. Hence the need for Chapter Two, in which is recorded the search in the existing literature (whether secular or theological) for compelling values.

Thus in this thesis, intentions are sourced from, and are to be in harmony with, the ways of the Christian God; and tangible (or realisable) means and ends are to be derived for specific situations, where improved justice will lead to the promotion of shalom. The thesis will argue that the flourishing of all species in the vicinity of artisanal gold mining in East Africa, may be promoted through the intentions of mining God’s way; through the means of just resource development; and towards the ends of mineral resource justice. It will argue that the development of this flourishing (as shalom) – where God blesses communities through minerals that are locally available, easily mined, and quickly sold – will require practical theologies, including the values of critical holism, development wisdom and intelligent love. The thesis will make a contribution to development theory.

My research led firstly to the use of mercury in processing gold from which questions relating to environmental justice could be asked. Secondly, research with the Migori County Artisanal (MICA) Mining Co-operative as an artisanal and small-scale miners’ organization (ASMO) led to questioning the role of economic justice in the

situation. Thirdly, research into how Christian miners perceive a just God responding to their community behaviour led to rethinking social justice within their mining livelihoods. The thesis investigates the intentions, means and ends of these social, economic and environmental dimensions of justice⁸ in the situation, querying the role of artisanal gold mining in the promotion of shalom within East African communities.

However, this is not a study, solely of the ordinary livelihood theologies, ethics and practices of Christian artisanal gold miners, within their situation. In 2011, MICA invited Greg Valerio (who is a campaigner for both fair trade and Fairtrade)⁹ to assist their first attempt to export gold and I accompanied him on this trip to Kenya (as described later). He opened the way for the UK-based Fairtrade Foundation (the Foundation), and others interested in fair trading, to enter the sector in East Africa. On the 8th of November 2013, The Fairtrade Labelling Organization published the *Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining* (the Standard) with the following statement:

Fairtrade's vision for artisanal and small-scale mining is aligned to the core Fairtrade values of empowering producers and local communities through trade and delivering economic, social and environmental transformation and restoration. Fairtrade believes that the intended change can only happen if both ASMOs and traders share responsibility and partner together towards sustainable and fair mining practices. (2013:4–5)

These concerns for transforming and restoring (i.e. developing) the economic, social and environmental dimensions of economic livelihoods apparently coincide with those expressed by the miners. The purpose of the Standard is to set minimum criteria that organisations of miners must attain prior to being certified by international auditors. Once certified, the artisanal and small-scale miners' organisation (ASMO) is entitled to payment for gold at 95% of the LBMA fix (2013:65); a premium of US\$2000 per

⁸ Sachs and Santarius introduced the concept of 'dimensions' in justice (2007b:29).

⁹ The thesis follows Eleanor Fisher and John Childs in using 'Fairtrade' when referring to the official Fairtrade International system and 'fair trade' to the wider movement and market (2014:144). The thesis also uses Fairtrade Gold to refer to the branch within the official system, then operational in East Africa.

kilogram (2013:66) ; and an ecological premium of 15% of the LBMA (2013:66).¹⁰ These are clear goals to financially compensate artisanal gold miners in the form of commutative justice,¹¹ yet their presence as agents of development, whether individuals or non-governmental organisations (NGOs), has introduced complications into the situation (as will be shown).

The project bears in mind the concerns of Gavin Hilson who believes that:

Worldwide, there has been a propensity to implement ASM support from the top down rather than the bottom-up, which, more often than not, has rendered promising projects ineffective: without careful analysis of target populations, operations and local conditions, how can appropriate technologies and industry support services be designed? (Hilson 2006a:10)

He calls for ‘providing impoverished participants in the ASM sector with more of a voice’ (Hilson 2006b:274), and their voices are used to describe their operations and local conditions as recorded in the field. In Appendix One, Christian artisanal gold miners in East Africa introduce the reader to their views of mining as livelihood (describing the situation in which the thesis is set), and there are further elaborations in the thematic chapters, where the miners also evaluate their situation.

In agreement with Bill Prevette, who maintains there are two community views of development (2012:319), the thesis classifies one community as Side A: the international view (from Above) e.g. United Nations Environment Program (UNEP), ethical jewellers, ethical and fair trade (EFT) Organisations, Government legislation, other NGOs and their like-minded affiliates. The other is that of Side B: the indigenous view (from Below) as held by East African artisanal gold mining communities, e.g. MICA. The interventions by Side A, as observed and interpreted by me during the course of the research, are intended towards the development of social, economic and environmental justice. At first sight, it may be believed this research has been adequately covered by John Childs whose thesis was concerned with ‘Fairtrade Gold: A

¹⁰ Each detail of this system is more fully explained, either in Chapters Four, Five or Six.

¹¹ ‘Commutative justice relates to justice in economic exchanges between individuals and/or parties. Thus it concerns, broadly, justice in production and exchange’ (Hartropp 2007:159).

new way of governing artisanal and small-scale mining in Tanzania?’ (2011). Even though we are researching similar interventions in overlapping situations, my aims are different and, in spite of their ongoing, serious shortcomings, my findings are not meant solely as a critique of the Fairtrade movement.

The ideal for mining as a vocation was stated centuries ago by Georgius Agricola (1494-1535) in his *De Re Metallica* asking:

who can fail to realize that mining is a calling of peculiar dignity? Certainly, though it is but one often important and excellent methods of acquiring wealth in an honourable way, a careful and diligent man can attain this result in no easier way than by mining. (1950:24)

The purpose of the research is to investigate this honourable way with Christian artisanal gold miners in East Africa.

My field work, totalling twenty-four weeks over seven trips, investigated the current ordinary livelihood theologies, ethics and practices of Christian artisanal goldminers in East Africa, within the context of interventions by ethical and fair trading organisations and individuals. Firstly, four trips to Kenya (in 2011, 2014, 2015 and 2016) investigated MICA as an ASMO that sought development. Secondly, the last of two field work trips to Uganda (in 2016 and 2017) explicitly investigated how miners described their livelihoods theologically. Immediately after the first trip to Uganda, I went on to visit Kenya in April 2016. Thirdly, all trips had the motive of investigating the mitigation of uncontrolled mercury use in artisanal gold mining. Mitigating the environmental impacts of mercury was threaded throughout the research including trips to Zimbabwe in 2012 (2 weeks from 4th till 18th May) and Tanzania in June 2014. All seven trips investigated the quest by Side A (whether by Greg Valerio, the Fairtrade Foundation or the CRED Foundation) for social, economic and environmental improvements in the daily livelihoods of artisanal gold miners. The research was facilitated through these Foundations and I was always associated with them, when in the field.

During my reflections on situations involving Sides A and B, I realised there were impasses¹² in the social, economic and environmental restoration and transformation hoped for by e.g. the Foundation. It is vital to find ways of overcoming these impasses to development and the approach taken for this analysis is again based on Swinton and Mowat. They note that ‘within the critical conversation that is Practical Theology’ (2016:85), the ‘conversation takes place between the Christian tradition, the social sciences and the particular situation that is being addressed’ (2016:76). These constitute three of the four Stages of their practical theology model: Stage One (present practices in the particular situation); Two (analyses within the social sciences); and Three (reflections through Christian theology).

The conversations in Stage One, are initiated by the agents of development such as the Fairtrade Foundation, whose Standard was introduced above. Their ‘oughts’ for the situation are contrasted with practices (what ‘is’ going on) as observed in the field by myself or by other researchers. In Stage Two, ordinary theologies, ethics and practices garnered from Christian artisanal miners such as Alimu and Aguttu (already quoted above). These are contrasted with the voices from the academic research community, either directly with regard to the situation; or taking a global perspective, regarding e.g. justice and development. In Stage Three, reflecting on the situation, another two will be included – theologians writing about justice and development; and their writing about the Biblically-revealed character and purposes of the Christian God. These three pairs of conversation partners then inform Stage Four of the practical theology model; formulating more faithful practices, which lead to my own initial efforts as a Christian mining engineer. The use of multiple conversations also follows Alvesson & Skölberg's (2009) method of using interpretations, drawn from a variety of sources.

¹² A common dictionary states ‘A predicament from which there is no obvious escape’ (Allen 2007c:643).

The impasses are analysed in Chapters Four, Five, and Six; and conclusions, about the intentions, means and ends of social, economic and environmental justice under God, are derived within each of the chapters that respectively address one of these dimensions of justice. Emerging from this study of the present situation, in Chapter Seven, it will be argued that the means of promoting justice is through just resource development. Secondly, the study informs the intentions of ‘Mining God’s Way’ as a Christian development mission relying on practical wisdom. Thirdly, it allows the formulation of an appropriate ‘end’ of justice for the situation, or a definition of mineral resource justice under God, that can be practised through Christian mission.

In summary, three observed situations (along with the four entities important to the miners, mentioned on p. 2) concerned with the promotion of social, economic and environmental justice, are investigated. Impasses in this promotion are analysed, using the practical theology model, through four research sub-questions:

1. To what extent do the ordinary theologies of miners regarding community behaviour inform approaches to developing social justice?
2. How do the expressed ethics of Christian miners guide hopes for economic justice in the development of their gold resources?
3. How can present livelihood practices regarding the use of mercury be mitigated in the pursuit of creation care, the flourishing of all species in the environment?
4. Which Biblical attributes are needed for theologically just approaches towards such flourishing, as mission with East African Christian miners?

Separate thematic chapters will deal with these questions sequentially, through discussions that allow the re-imagining of the social, economic and environmental dimensions of justice as shalom. The chapters respectively address these three dimensions and the four entities that concern miners: God, gold and community

behaviour; God, fair trade and economic blessing; God, mercury-free gold processing and the flourishing of other species in the vicinity; and God, mission and wisdom.

While flourishing in the vicinity rests upon gold mining practices, the thesis only addresses good and responsible mining within the overall pursuit of justice for communities in the situation; i.e. the three aspects of social, economic and environmental justice, arising from their mining livelihood. The thesis is not about technical practices; speaking colloquially, mining is a competency, like swimming or playing music, which in itself can only be ranked in terms of expertise. As a result, an extended description of these mining practices is placed in Appendix One rather than in the body of the thesis. The impacts arising from artisanal gold mining as livelihood will (to a greater or lesser extent) promote flourishing in its vicinity, e.g. those practices that are connected to the use of mercury within creation care.

The structure of the thesis is now outlined.

Recalling that practical theologies arise through reflecting on the situation, in Chapter Two the literature is reviewed both for text-based collaborators to evaluate the research findings, and to note possible shortcomings or disagreements with the findings and conclusions in the scholarship. The review is divided into three sections that follow the first three stages of the practical theology model. In the first section, the academic research community describes the present situation regarding mineral resources and economic livelihoods. The second section reviews development and resource justice theory and the third section briefly reviews theologies concerning four characteristics and purposes of the Christian God in one subsection, and human sin in another.

The study draws on practical, ethical and theological interpretations of the situation, as described in the methodology (Chapter Three). The practical theology model provides a format for the next three thematic chapters that sequentially deal with social, economic and environmental aspects of miners' livelihoods. Pre-fieldwork preparation

is developed from the literature dealing with ethnographic research into situations undergoing development and into investigating people's theologies. The chapter moves beyond fieldwork to the methodologies of analysis and evaluation of the findings. These methods will allow the themes to be established which are then evaluated in the following thematic chapters. Finally, an investigation into philosophical hermeneutics, as integral to the research approach, is outlined.

The findings, from research into how miners perceive a just God in the pursuit of their daily livelihood are analysed in Chapter Four. This first thematic chapter investigates their responses regarding how they see gold, in the hand of God. There is a strong sense that gold is a gift from a proximate God for the local human community and yet these divine blessings may be withheld, dependent on community behaviour (an ethical triangle of God, gold and community). Their beliefs are in sharp contrast to those of the Foundation, who perceive social transformation and restoration in the community very differently. The Foundation's intentions are either improved human rights for gold miners in the system of production (ore supply and processing chain) or infrastructural development of social facilities for the community. However, the miners' concerns for the wellbeing of the community beyond the workplace, including their religious/ theological approaches, are backed by the academic research community. It will be recommended that any future interventions by Side A should take the Christian miners' ethical triangle into account when promoting the social dimension of justice in the situation.

Chapter Five (the second theme) discusses the miners' strong desire for better revenues arising from the fairer trading of gold, i.e. cutting out the local middlemen, which would result in more ethical gold sales. In sympathy with these expectations of increased financial benefits, there are individuals and organisations active in the situation. Intervening ethical and fair trading (EFT) organisations have written standards

of good and responsible mining, intended to mitigate the economic, environmental, social, and governance impacts caused by artisanal gold livelihoods. Miners, in membership driven organisations, are expected to comply with these standards and criteria and then be certified by outside experts before improved revenues, in the form of minimum prices and premiums, can be realised. The miners do not have the working capital to accumulate the quantity of gold required for export, and neither the individuals nor the EFT organisations are in a position to supply these finances (tens of thousands of pounds sterling). The impasse in reaching economic justice, which caused by this lack of financial capital, is investigated in this chapter.

Chapter Six (the third theme) investigates the miners' sense of agency over their use of mercury in extracting particles of gold from concentrates and tailings dumps. Christian miners are concerned about the impacts of mercury pollution on the flourishing of creation, both presently and for future generations. Through interventions by EFT organisations and national governments, measures have been adopted to reduce the immediate impacts of uncontrolled mercury use on the health of miners and their families. However, other species in the locality, even the fish in nearby Lake Victoria, are likely to be impacted by mercury pollution in the environment (caused by emissions into the atmosphere and releases into watercourses). As a result, the United Nations Environmental Programme (UNEP) has produced the Minamata Convention, to which the countries of East Africa have become signatories, agreeing to reduce and then eliminate the use of mercury. There is no evidence of this reduction, nor are steps being taken towards its elimination by the miners, and reasons for this are investigated in this chapter. While the use of mercury is predominant, there can be no environmental justice (or in Christian terminology, creation care and stewardship) in the situation observed.

In summary, these three chapters investigate three situations within artisanal gold mining in East Africa to establish the intentions, means and ends of developing social, economic and environmental justice under God.

Chapter Seven (the fourth and final thematic chapter) considers justice, in each of the prior thematic chapters, as an axis which goes from the articulations of the miners through increasingly abstract levels of evaluation to reach the metaphysical characteristics of the Christian God. It is in the *mishpât/ sidiq, chesed*,¹³ shalom, and loving character (and purposes) of a just God that these axes of justice converge (fuse together) to form mineral resource justice under God. The thesis will conclude that only the harmonious integration of the four entities that concerned the miners (God, gold, community and other species) will lead towards shalom in the situation.

The thesis will conclude by noting that the impasses in the three situations have been used to establish the intentions, means and ends of developing social, economic, and environmental justice under God. These impasses can be partly overcome by an approach through mining God's way, whose intentions are to please God by conforming to Biblically revealed ways of the Divine. Its means, through just resource development; and mineral resource justice under God (as the ends); are formulated as my contribution to theories of artisanal and small-scale (ASM) development.

¹³ This is one of various transliterations of the Hebrew word, as per Strong's number H2617e.g. <https://www.blueletterbible.org/lang/lexicon/lexicon.cfm?strongs=H2617&t=KJV> accessed May 2020.

Chapter Two

Literature Review: Just Resource Development

Introduction

The structure of the review follows Swinton and Mowat's practical theology model, where the sections of the chapter correlate to Stages One (present practices in the sector); Two (analyses within the social sciences); and Three (reflections through Christian theology). The subtitle of this chapter 'just resource development' covers the three sections (that follow these stages) where, firstly, the word resource includes the literature regarding artisanal mining; secondly, a review of development in theory; and thirdly, Biblical and other concepts of the just ways of God are reviewed. Within these categories, the review is concerned with the modes and values of development: not primarily to find lacunae in the authorship of others, but to search for wisdom regarding justice.

The first section of the review investigates economic livelihoods and community flourishing; topics covered include the unique economics of mining, the activities of artisanal mining in particular, and concerns over its governance. These findings illuminate the meaning of good and responsible mining both now and in antiquity, leading to the fieldwork that researches present activities in East Africa.

The second section of the chapter concerns the quest for the development of natural resources to provide livelihoods, including rural Africa. The review uncovers useful concepts in development literature relating to values, religion, love, wisdom and problems in development. The question of the development of resources leads to ideas of natural resource justice, an important link back to livelihoods. Notably in Western text-based theory both the words 'resource' and 'development' are economic constructs which lead to needs for field research to establish local understanding.

The third section reviews firstly, applicable theologies of the characteristics and purposes of the Christian God, and of human sin, which may be appropriated for interaction with the situation researched. These are usually expressed in the western hemisphere, but can be applied to the research in artisanal gold mining in East Africa.

The literature is not treated monolithically, instead it is separated into three conceptual categories; firstly, artisanal mining studies which criticise the sector as observed in practice. Secondly, the corpus of theory which produces textbooks for education (Preston 1996; Simon & Narman 1999; Kesler & Simon 2015) e.g. Peter Preston's *Development Theory* supplied a useful approach for researching development in the field (1996:302). His approach is noted in the chapter on Methodology, and this category is of no further concern. Thirdly, critiques by scholars who think about thinking, e.g. Jan Nederveen Pieterse, whose monograph is 'concerned with questions of general methodology and the philosophy of development' (2010:144). The first and third of these three categories within the literature are drawn upon in this chapter.

The review starts by investigating mining in general, then artisanal mining, as published by other researchers which will ultimately be addressed by findings from the East African situation, introducing the conversation partners who will contribute to the intentions, means and ends of justice and to the practical wisdom required for future Christian mission.

2.1 Mineral Resources and Economic Livelihoods

In this thesis, the ends of mineral resource justice and the means of just resource development are problematised within the human activity of mineral resource extraction which is mining. Mining is ‘the processes, occupation, and industry concerned with the extraction of minerals from the earth’ (Hartman 1992:24). Erich Zimmermann recognises that the ‘word “mineral” is itself not quite clear. Of course, it is drawn from mine and mining and therefore suggests getting something from the ground by digging’ (Peach & Constantin 1972:336). ‘It is often said that “if it’s not grown, it’s mined”, a telling reference to the fact that human society is more dependent than many might like to think on mining’ (Abbot & McKenna 2012:771). Rather than querying the need for minerals, it is the economic livelihood of artisanal miners which is the concern of this thesis, and Appendix One describes their activities in extracting gold from the earth, on which they rely.

The first subsection presents the uniqueness of mining economics as constraints to the promotion of justice in the situation being researched. The second subsection introduces the academic research community and their understanding of artisanal and small scale mining. The third introduces another party within Side A, ethical and fair trade (EFT) organisations, whose interventions in the situation form the basis of later chapters. In the fourth subsection, legislation for the sector with respect to the Government of Kenya is elaborated.

2.1.1 Four economic constraints in artisanal mining

In a sentence above, mining is ranked with agriculture as one of humankind's two basic, earliest industries – both of which are capable of generating new wealth. However, this form of wealth generation is subject to specific constraints which inform any approach to just resource development. As a first constraint, unlike arable land for agriculture, only a fraction of the earth's surface is underlain with mineral deposits that are of

commercial value. These deposits are neither abundantly nor uniformly distributed and they are immobile, thus mining is restricted to the locality in which they occur (Hartman 1992:24–5). As Rohit Negi observes ‘the geography of ...extraction follows geology, which means there is a severely limited milieu of locational choices available’ (Negi 2010:211). Mining cannot be moved to a more convenient location, it either proceeds where minerals are found in economic quantities or it is banned. Another difference from agricultural or forest products, is that minerals cannot reproduce or be replaced except in ‘long geological cycles’ (Sachs & Santarius 2007a:43), that is ‘the formation of mineral ores¹ and deposits ...are the result of planetary forces that have been active for billions of years’ (Bardi 2014:3). The activity of mining is a very brief episode in the geological history of the planet. None of the minerals will re-form in time for humans to use them again, the genesis of new deposits and new ores is going to continue at the slow pace it has maintained for the past billion years (Bardi 2014:25). So a mineral deposit being mined may be viewed as a depleting or wasting asset (Hartman 1992:24–5) and Derek Spooner agrees ‘at least on the human time scale’ mineral resources are ‘exhaustible, fugitive² and finite’ (1981:6). Importantly for this study, ‘Gold and silver are not precious by chance, and considering that two-thirds of gold and three-fourths of silver reserves have already been mined, they will certainly retain their value in coming years’ (de Sousa 2014:89). As a final note, it was estimated in 2014 that gold production annually is ‘about 2,500 tonnes (80 million ounces) worth almost \$135 billion’ (Kesler & Simon 2015:258), of which between 380 and 450 tonnes of gold is produced by artisanal miners (Seccatore et al. 2014:665) i.e. between 15% and 18%. However, four years later, an updated estimate of artisanal gold production is 670 tonnes³ out of 3230

¹ Deposits that are concentrated enough to be profitably mined are normally called ores (Bardi 2014:13).

² Not easily found, ‘elusive’ (Allen 2007b).

³ <https://delvedatabase.org/data> accessed December 2019

tonnes⁴ produced or 21% in 2018. In terms of this trend, there is no likelihood that livelihoods derived from artisanal gold mining are in immediate danger of collapsing, but the question of justice within the pursuit of this livelihood remains to be investigated.

As a second constraint, most minerals produced do not go beyond an immediate beneficiation (i.e. processing of the ore)⁵ for transportation or export purposes (World Bank 1989:126). Thus most metals and minerals are sold as raw materials, albeit refined, but not as manufactured items, e.g. gold and jewellery. Market supply and demand complicates the economics of the mining industry because the price of minerals and metals varies more sharply than the price of commodities manufactured from them (Hartman 1992:24–5). Almost invariably, the revenues for mining products are based on prices set by metal traders or metal exchanges and ‘world mineral markets are inherently volatile’ (World Bank 1989:122). All these observations are true of gold, as described in Appendix One, which shows how the income of artisanal gold miners is dependent on internationally determined prices (the LBMA fix, as published on the internet). These economic constraints to realising mineral resource justice in the situation are concerns to be studied in later chapters.

Thirdly, also recorded in Appendix One, miners and mine owners collaborate through sharing the ore which means they all benefit when grades are good and all suffer when grades are poor. The economics of sharing and the generally impecunious state of miners in East Africa remain similar to medieval Europe. According to Lacy and Lacy, as mining extended underground, miners formed partnerships whose contributions were memorialised in a ‘cost book’. In 13th Century Germany, cost-book associations usually consisted of sixteen able-bodied men and production was shared

⁴<https://www.statista.com/statistics/238414/global-gold-production-since-2005/> accessed December 2019

⁵ ‘Economic considerations normally require that such processing be done as close to the point of origin as possible, i.e. at the mine. It is too costly to transport waste any further than necessary’ (World Bank 1989:69).

among them, and a similar system is still currently in place in East Africa. Later, in Europe, as treatment and marketing became more complex, profits from sales were divided among the ‘adventurers’ and because money was rarely set aside, declines in metal prices or grades generally resulted in mine closure. Growing demand for capital equipment to meet increases in output meant operators gradually lost control to investors issuing stock as evidence of proprietorship and the miners became contract workers (1992:20). The influence on economic justice by these constraints, which appear to be similar in East African artisanal gold mining, in that sharing the risks of ore grades (and therefore wealth) does not appear to accumulate into the required capital financing for development, will be investigated in Chapter Five.

Fourthly, the Mining, Minerals and Sustainable Development (MMSD) report believed five forms of capital can be realised in such situations. ‘Minerals can thus make an important contribution to realising the various capital assets - natural, social, human, physical, and financial - that people draw on to build their livelihoods’ (2002:75). They stated that ‘The idea of “capital” lies at the heart of sustainable development. This goes well beyond the common idea of financial capital’ and they further believe that ‘*financial capital*, the value of which is simply representative of the other forms of capital’ (2002:22). The MMSD list these five forms of capital as bases for evaluating the acceptability of development by the various constituencies involved (2002:21-2). Yet, Wolfgang Sachs and Tilman Santarius note ‘that the producers are often the weakest link in the chain ... because their “capital” – whether land, crop rotation, climate or physical strength cannot be easily invested elsewhere’ (2007b:143). This reference to the immovability of labour capital, i.e. the miners’ labour is not investable elsewhere and therefore can be discounted in financial terms is important to this thesis and the value of these capital assets will be investigated in Chapter Five.

This sub-section has shown that artisanal miners' economic livelihoods face four particular economic constraints. In summary they are: the locality and grade of the gold cannot be changed; prices are set internationally; collegiate sharing in the proceeds of mining may not generate financial capital; and the value of their capital (in whatever form) is discounted. These constraints, brought to the fore by me as a mining engineer, are to be borne in mind during the subsequent investigations into the pursuit of social, environmental and economic dimensions of justice within the situation.

The review turns to investigate the contribution of academic researchers towards understanding artisanal mining as economic livelihood. Months of field work resulted in descriptions of their livelihood (mostly by the miners themselves), which are placed in Appendix One, and complement the following findings from the literature.

2.1.2 Artisanal mining and the academic research community

Continuing the overview of the sector, this subsection examines the published findings of other researchers involved in ASM. It first turns to the struggles over defining the sector and the practices of artisanal mining as a livelihood, before a definition of artisanal gold mining is assembled from these academic sources. This definition is to be borne in mind during the analyses of justice in the later thematic chapters, and remains foundational when defining an appropriate form of justice in Chapter Seven. Finally the subsection investigates the health and safety of miners at work.

John Hollaway suggests that all mining was once artisanal, becoming small-scale when 'the need to formalise the ownership of minerals developed' (Hollaway 1997:36). Mining has been an entrepreneurial activity since the Palaeolithic Stone Age when artefacts were skilfully shaped from flint heralding the dawn of civilization (Ghose 2003:459). Even now, the techniques and technologies presently used in artisanal mining differ little from those used since the mists of prehistory (United Nations

1972:21). One recent Mining Act relies on this description: ““artisanal mining” means traditional and customary mining operations using traditional or customary ways and means’ (Republic of Kenya 2016). Generally, the literature interchangeably uses the labels ‘artisanal’, ‘artisanal and small-scale mining’ and ‘small scale mining’ e.g. Rex Bosson and Bension Varon did not separate artisanal mining from small-scale mining (1977:261–4). These are not new conflations – ‘one of the biggest conceptual headaches has been setting the boundaries of what is actually implied’ (Gibb 2006:42) by these labels. These discussions have ‘engendered a sequence of internationally hosted conferences espousing grand theories, critical analyses, policy recommendations and proposed plans of action’ (2006:54).

Stephens Kambani helpfully categorised artisanal and small scale mining in Zambia into three different levels, the ‘first type, artisanal mining (micro-scale mining) encompasses the smallest with simplest operations’ and is ‘characterized by the use of simple tools and the absence of a formal enterprise’ (2000:22). He states elsewhere that it can be started and discontinued easily due to its operational simplicity and the absence of meaningful investment (2003:46). These descriptions of the simplicity of artisanal mining allow it to be defined separately, but simple does not equate to customary or traditional as per the Kenyan legal definition above. Kambani describes the second level as consisting of both licensed and unlicensed mining sites that are non- or semi-mechanized. The third level consists of licensed small-scale mining operations using highly mechanized methods and formal management structures (Kambani 2000).

The split between the non-financed sector and the financed (or capitalised) sector is taken to occur between the second and third levels. The United Nations clarifies this distinction: ‘For use as criteria of scale, the two terms, “capitalization” and “mechanization” are for all practical purposes interchangeable, since the only effective measure of mechanization is in terms of capital investment in plant and equipment.’

(1972:24). Thus the first and second level requires little to no capital investment and the highly mechanized third level requires financial inputs that are typically beyond individual miners or collectives. Thus Kambani's third level, hereafter labelled as small-scale mining, will be classified within the small to medium enterprises sector (Acs et al. 1999). The category of artisanal mining, as used in this thesis, is typically taken to be unlicensed, non-mechanized and lacking capital investment.

The label 'micro-scale', as previously introduced to describe artisanal mining, is officially used by the Southern African Development Coordination to describe 'manual mining with simple tools without using mechanical energy' (Mutagwaba et al. 1997:145). The smallest and least advanced of mining operations is also 'often referred to as artisanal or subsistence⁶ mining' (Andrew 2003:118). Notwithstanding these synonyms, this sector is henceforth labelled as artisanal mining even though there is no 'all-purpose definition that can be applied ...to countries everywhere featuring this type of activity' (Gibb 2006:42). Instead, 'African governments have relied on a wide range of criteria, including production, levels of mechanization, and concession size' (Hilson 2003c:234). Crispin Kinabo agrees that while definitions of artisanal and small-scale mining vary from country to country, the criteria used are clustered around social factors, economic factors and environmental factors (2003b:289). Researchers in Tanzania include social and economic criteria in their definition: artisanal mining is 'individual or collective labour-intensive mineral extraction with limited capital investment using basic tools, manual devices or simple portable machinery' (Bryceson et al. 2014:1). This enlarges an earlier definition by the United Nations Environment

⁶ At this time in history there are unlikely to be any communities who mine minerals and metals and then benefit from their own manufacture and use e.g. iron implements, bronze weapons, gold artefacts or precious stone ornaments. In this respect artisanal mining is not subsistence mining (as per the concept that subsistence farmers consume their own crops) and in this thesis artisanal mining provides revenues from the minimum processing and quick sale of gold as a livelihood. Sachs and Santarius note that 'People have been exchanging goods since time immemorial: it is one of the activities that make humans into social beings' (2007b:139) and here the exchange is usually for money and may include goods such as mercury (Pardie & Hilson 2006).

Programme (UNEP) as ‘gold mining conducted by individual miners or small enterprises with limited capital investment and production’ (2013b:3). UNEP repeats this definition in their English text of the Minamata Convention on Mercury (2013a:2) where the artisanal gold miners’ use of mercury is their concern. This scale of ‘gold mining involves the extensive excavation of pits using simple tools such as hand hammers, picks, hoes, and shovels’ (Kinabo 2003a:295). Finally, artisanal mining is described as ‘usually characterized by small, relatively unsophisticated operations using ...little mechanization and lacking formal business arrangements or legal title to the sites extracted’ (Andrew 2003:117). Unstated in all the somewhat repetitive descriptions of artisanal mining as reliant on simple, cheap and labour intensive methods is that the minerals⁷ sought must be easily separated from their host material such as sands, soils or rocks. This ease allows for ‘minimal processing technology. For instance, gold is recovered using simple mercury amalgamation processes’ (Kambani 2003:45). In turn, this ease of recovery ‘lowers any barriers to entry’ which is ‘the principal economic characteristic’ of artisanal mining (Kambani 2000:29).

As a collated definition for use in the thesis, artisanal mining is a ‘people initiated’ (Bugnosen 2003:18), ‘self-reliant’ (Stewart 1997:181), ‘labour intensive source of livelihood’ (Davidson 1993:316), for ‘individuals or collectives with limited capital investment’ (Bryceson et al. 2014:1), ‘using rudimentary techniques’ (Hinton, Veiga & Beinhoff 2003:161), for ‘quick cash returns’ (Kinabo 2003b:289), as a form of ‘local wealth creation’ (Ostensson 1997:25). It can thus be seen as a spectrum of activities ranging from the lone miner digging in almost inaccessible locations, to semi-permanent settlements of mining communities, accessible to the authorities, where miners can work together in artisanal and small scale mining organisations. These

⁷ From this point in the thesis ‘mineral’ i.e. a substance obtained from the bowels of the earth (Murray et al. 1933c:466), will be taken to refer to gold.

qualitative descriptions reinforce the conceptualization used in this thesis: that it constitutes the non-financed mining sector of the minerals extraction industry providing economic livelihoods.

Without the references, the above definition reads: Artisanal gold mining is a people-initiated, self-reliant, labour intensive source of livelihood for individuals or collectives, with limited capital investment, using rudimentary techniques, for quick cash returns, as a form of local wealth creation. The elements of this definition compare well with the descriptions in Appendix One but some of the phrases do not bode well for the promotion of justice within the artisanal gold mining situation. Improved livelihoods in the sector may be hampered by the perceived lack of sophistication, mechanization or equipment, legal title and finance, in addition to the constraints raised in the subsection above, reminiscent of Europe a few centuries ago.

Anthropologists have studied some of the beliefs of miners, e.g. ‘miners relate to a superhuman world of saints, devils, deities, and enchanted beings with which they live in the mine, the encampment, and the region’ (Nash 1993:121). Also, ‘Miners harbour secrets. Those who find a rich vein are better off keeping it secret. Secret recourse to magic gives a miner a hoped-for advantage over fellow miners’ (Bryceson et al. 2013:370), and the use of magic among artisanal miners has been researched in the Congo (Stoop & Verpoorten 2020). Without the fascination of magic, this study has researched the beliefs and culture of Luo miners (P’Bitek 1971; Ndisi 1974; Ocholla-Ayayo 1976; Cohen & Odhiambo 1989; Geertz 1993; Malo 2003). What is missing from the academic literature is an approach to the development of artisanal mining that includes a Christian theological approach such as this study. Formulations of justice and just resource development, in the following thematic chapters will be informed by all the above concerns, as raised by the academic research community.

As noted in the thesis Introduction, my own presence in East Africa was facilitated by ethical and fair trading (EFT) organisations; and the next subsection enquires into their ethical motivations and expectations.

2.1.3 Responsible artisanal mining and EFT organisations

The concepts of fair trade have been around for some decades and the review now focuses primarily on the literature produced by particular EFT organisations that are presently intervening in the situation. As agents for development, it is important to get their perspective, what they believe ought to be going on, how they see responsible mining as the goal of their interventions.

In terms of theories or broad principles of ethical and fair trading, Alex Nicholls and Charlotte Opal assert that:

Fair Trade has three interlinked aims: to alleviate extreme poverty through trade; to empower smallholder farmers and farm workers to use trade relationships as a means of enhancing their social capital; and to support the wider campaign for global trade reform and trade justice. (2006:25)

While their comments refer to agriculture; these aims of poverty alleviation, enhanced social capital, and trade justice, are investigated further in this thesis addressing mining.

These aims tie into Valerio's similar assertions, made in his autobiography, regarding artisanal mining as a supplier of precious metals and stones for the jewellery sector. He realised (in 2001) that the 'level of consumer awareness around ethical issues in jewellery was almost zero at the time, and consumers simply did not ask questions about the source of their jewellery' (Valerio 2013:47). These initial concerns resulted in him visiting (during that same year), a small-scale mine in India, which was a source of garnets used in manufacturing jewellery. Shocked by his perception of human exploitation, he admitted 'my total ignorance of small-scale mining was a deep embarrassment to me. Equally disturbing was the fact that no one in the jewellery sector had, to my knowledge, bothered to address its scandalous abuses' (2013:52). In 2004 he

vowed to tell the story of the miners' livelihoods to the purchasers of his jewellery thus connecting his customers to the miners 'struggle for justice' (2013:84).

Valerio hoped that this 'would spawn a movement nationally and internationally that would deliver justice through jewellery' (2013:89). He wished to use the marque of Fairtrade believing it was the right way to go due 'to the strength of the certification system versus the more amorphous claims that were beginning to be made in the name of ethical jewellery' (2013:108). When he, as a jeweller, says to the customer, "This is Fairtrade gold," the customer can see the Standard and can check the audits if they wish. The independent certifier is not connected to either the jewellery business or the mining group (2013:108). As will be shown, it is the abuses and exploitation of labour which embarrassed Valerio that have been translated into matters for auditing and certifying by EFT Organisations. Valerio's desire to raise ethical awareness within High Street jewellers and their customers about the world of artisanal and small-scale mining has been honoured with an MBE (Seek 2016) and an Honorary Doctorate by the University of Winchester (Press Centre 2016).

Returning to Nicholls and Opal: 'Fair Trade also makes the free trade system work the way it is supposed to,' that is 'the actors within a free trade system should benefit from the increases in transparency, efficiency, and competitiveness that come from Fair Trade's expansion of the market power and knowledge base of primary producers' (2006:31). They further claim that 'small-scale producers are typically isolated from direct export access unless organized into co-operatives or similar group-selling structures' (2006:33). Instead, the transfer of 'market knowledge to producers in developing countries will inevitably make them better off. So there are some losers in Fair Trade, namely brokers and middlemen, who had been relying on one-sided information flow and exploitation' (2006:31). These practical assertions will be investigated in the chapters which follow.

Nicholls and Opal go on to make four sets of ethical claims. Firstly, they claim that virtue ethics ‘represent the “means” not the “ends” that can generate a “good” life. Thus, unethical means can never be justified by ethical outcomes and a virtuous action cannot be so described if it has been carried out with unethical intentions.’ These ethics centre

on a set of predefined internal characteristics, rather than external imperatives, that governs ethically good behaviour and allows the individual to make the 'right' choice of action. The four chief virtues established by Aristotle's mentor, Plato, were: courage, wisdom, self-control and justice. Of these, Aristotle gave primacy to justice. (Nicholls & Opal 2006:61)

For these theorists ‘the virtuous individual is an identifiable actor in the development of ethical and Fair Trade’ (2006:62) and how this might apply to Valerio will be discussed.

Secondly, ‘Fair Trade stands as a manifestation of a normative categorical imperative that establishes the need to treat others fairly (as one would wish to be treated) and to avoid exploitation’ (Nicholls & Opal 2006:63). This gives rise to deontological ethics i.e. ‘deontology demands that the principled corporation (or individual) address issues of fairness and justice in all its dealings ...(to) develop a commercial model of social justice and to act as advocates for the rights of farmers in the South’ (2006:64). Models of social justice as they might apply to artisanal mining will be critically discussed in Chapter Four.

Thirdly, there should be ethical learning and growth: ‘self-knowledge through learning can be both the means to achieve ethical outcomes and an ethical goal in itself’ (2006:66). Such ideals are the subject of later investigation, through the practical findings arising out of actual interventions in the situation.

Fourthly, Nicholls and Opal desire teleological ethics where such ‘an ethical approach to decision making in this context involves considering (and perhaps even consulting) all stakeholders first’ (2006:67). The practical application of an all stakeholder-first model will be considered through later critical conversations.

Based on these, they also claim that: ‘Indeed, Fair Trade is congruent with a variety of interpretations of the moral response to injustice such that it effectively defies criticism from an ethical/philosophical perspective’ (Nicholls & Opal 2006:69). Even if this resultant claim is true, the issues facing artisanal gold miners in East Africa are the likelihood of ethical and fair trade being implemented and sustained in their situation.

A significant position taken by the Standard is that it believes there is a need to go beyond cutting out the local gold dealers, the middlemen. Noting Valerio’s concerns about the exploitation of labour that he observed, the Standard prescribes how mining and production practices are to be fair, sustainable (2013:4) and ethical; these are expectations which ‘lie behind every Fairtrade product’ (2013:26), which must be implemented before fair trading can begin. In other words, Valerio and other High Street jewellers in the UK have given their proxy to EFT organisations to certify this fairness in artisanal gold production. Based on the above principles, the Standard issued by the Fairtrade Labelling Organization, expects any artisanal and small-scale miners’ organisation (ASMO) seeking certification to address, at least:

improved environmental management (including mitigating the use of mercury and ecological restoration); social security; gender equality; child protection and the elimination of child labour in mining communities; the well-being of families and children, fairer market access; benefits to local communities in mineral-rich ecosystems; and improved governance within this sector. (2013:3)

These weighty matters presumably cover the aforementioned ‘core Fairtrade values of empowering producers and local communities through trade and delivering economic, social and environmental transformation and restoration’(2013:3) which assumes that the miners’ world requires transforming and restoring on a global scale.

Their requirements, with respect to the ‘fair’ in fair trade, are then spelled out over nearly 200 clauses in the Standard; most of which apply to the ASMO although some are directed at the trader. The clauses are concerned with the labour conditions that would be expected in Kambani’s third level of artisanal and small-scale mining (2003:46). At this level, the ASMO is a licensed small-scale mining operation using

formal management structures (Kambani 2000) as noted in the previous subsection. Yet, the Standard defines ASM as referring to ‘informal mining activities carried out using low technology or with minimal machinery’ (2013:67), which ties with the definitions already found in the literature reviewed above. In spite of this acknowledged informality, ‘the overall objective of this standard is to create opportunities for artisanal and small-scale miners and their communities, by promoting the formalization of the artisanal and small-scale mining sector through establishing membership-based artisanal and small-scale mining organisations (ASMO)’ (2013:3). No sooner is the sector defined as informal, then immediately formalization is pursued through establishing organisations, even though they may not exist and the miners may never have co-operated in this way. The Standard then assumes their existence and entirely relies on the strength and capacity of these organisations to improve working conditions for miners and to ‘promote a responsible ASM sector’ (2013:3). The resulting certification of the ASMO prior to trading results from auditing these responsibilities through policies and practices of the ASMO with its members and with local stakeholders. Other measures relate to the ‘trade’ part of fair trade in terms of traceability, product composition, responsible sourcing, transport controls, and the use of the Fairtrade trademark but do not specify the minimum amount of gold to be traded.

This overview of the Standard indicates its reliance on contractual, certifiable and therefore accountable approaches to the development of fair trading. In summary, according to the Standard, the idea of fairness in production is founded on implementing labour and employee rights by, within and in relation to the ASMO, as well as seeking to improve their fairness in dealing with the local community. In other words, having been commissioned by ethical and fair trade jewellers, EFT organisations have in turn tasked ASMOs to ensure such standards of fairness are put into practice.

Recent studies have investigated the claims of empowerment by such organisations active in this sector and found (where such an expression is used as a trope), the situation is invariably complex (McQuilken 2016; McQuilken 2018). The interaction between standards (such as this one, briefly outlined), and the specific practices, understanding and beliefs of artisanal gold miners in East Africa, will inform later chapters.

There are references in the Standard to the legal status of artisanal mining and as the question of legality is integral to just resource development, next subsection enquires into legislation and the micro-scale of mining.

2.1.4 Artisanal mining and legislation

This subsection briefly probes the relationship between the sector and its national government because this has an effect on gold sales and on future development.

The World Bank defined artisanal mining (for the purposes of their 1995 round table discussions) ‘as the most primitive type of informal, small-scale mining characterised by individuals or groups of individuals exploiting deposits usually illegally – with the simplest equipment’ (Barry 1996:1). Hollaway referred to ‘illegal mining, that is the winning of minerals by people who do not have the sanction of the authorities to do so’ (1997:35–6). Artisanal mining has been described as having a ‘large degree of autonomy’ from ‘national social, legal and economic regulations’ (Heemskerk & van der Kooye 2003:662). Ajoy Ghose maintains that artisanal miners ‘eke out a subsistence level of existence, mostly in the informal sector, outside the pale of legal or regulatory frameworks’ (2003:459). The connection between illegality and gold remains current in the popular media: ‘While poverty remains in play, the same allure which drew prospectors of old... will continue to attract illegal miners. It’s the stuff of “gold rush” fever – and that’s hard to legislate against’ (Bouwer 2015:102). More positively, ‘Gold

diggers tend to be self-reliant and fiercely independent people and this very aspect may play a part in breaking patterns of dependency' (Stewart 1997:181). Other minerals may be mined independently of legislation but their sales and marketing do not attract the concerns that gold does. As an example, Jeffrey Davidson comments further:

Because much artisanal activity involves the mining of high value, low bulk, easily marketable and exportable commodities, it is prone to illegality, if not in the mining, then in the marketing. For government authorities, this aspect has proved most problematic, given the loss of government tax revenues and foreign exchange earnings, and the violence and criminal activity that may follow. (1993:317)

His concerns with gold sales fall within investigations into the good and responsible nature of livelihoods derived from artisanal mining. Kambani repeatedly makes a clear link between illegal mining and illegal marketing of 'high unit value minerals' (1995; 2000; 2003) arguing that they are 'natural partners' (2003:55). By illegal he means the 'selling of product outside legally accepted channels' and that 'gold and gemstones (including gem diamond) have the highest concentration of illegal mining and marketing activities, both by value of output and numbers of people involved' (2003:45). Illegal buyers can provide pre-financing 'against future production' and commonly visit the mines to buy the minerals directly so that miners therefore do not have to travel, which can be expensive (2003:55). Gold, with its low weight, high value, and non-perishability, is immune to the tyranny of distance (Murray 2003:538), thus its transportation does not require an elaborate infrastructure (Kambani 2003:45). This encourages miners 'to sell their gold immediately because of their constant need for cash flow, which, in turn, fuels the proliferation of the trade' (Grätz 2006:154). Kinabo made the similarly important point that artisanal miners in Tanzania seek 'quick cash returns' (2003b:314) and this is facilitated by on-the-spot buyers. Furthermore, Kambani maintains that illegal trading may be due to various other reasons, including tax evasion, avoiding state control of marketing and pricing, and bypassing an

overvalued local currency⁸ (2003:49). Hollaway perceptively notes: ‘Gold and gemstones are, in effect, hard currency hidden in the ground, spurring “barefoot prospectors” to seek them’ (1997:37). Nevertheless, echoing Davidson above, Kambani believes illegal trading causes ‘significant direct and potential economic losses to affected countries’ (1995:107). Present interventions by various EFT organisations will be extensively discussed in Chapter Five, which is concerned with economic livelihoods and investment.

Returning to relationships with government, over two decades ago, one felt that ‘artisanal mining is viewed by many as an unavoidable nuisance which has to be “tidied-up” in order to be properly cleared away’ (Allison 1995:2). If not cleared away then governments, such as Kenya, seek to limit its legality to an absolute minimum activity within the mining industry. Importantly, for this thesis the Mining Act of Kenya 2016 (section 96 subsection 1) states that an artisanal mining permit shall be valid for a period three years and be renewable for one more term. Thereafter the holder may apply to convert it to a small scale permit in the manner prescribed, however, the Second Schedule bans even the small-scale miner from using ‘mechanised mining technologies; chemicals including mercury and cyanide; or explosives’ (Republic of Kenya 2016).

This Act was promulgated, in spite of warnings issued 13 years previously:

The various restrictive provisions of many existing small-scale mining licences, such as: (i) a ban on the use of explosives and machinery, (ii) their short-term duration, (iii) the limited depth of underground workings allowed, and (iv) lack of security of tenure, which hinders the development and inhibits the efficiency of small-scale mining. It also leads to illegal practices in an otherwise legalised activity. These provisions, therefore, should not be adopted or amended accordingly. (Bugnosen 2003:18)

By ignoring these warnings, the Kenyan Mining Act could keep operations at this scale of mining permanently illegal, and its legality will be kept to an absolute minimum activity within their mining industry.

⁸ Kambani explains ‘where the local currency is overvalued, a payment in local currency results in underpricing of the commodities’ (2003:50).

This review of the relationship between the State and artisanal mining indicates that just resource development will not proceed easily in a sector with such a long and complex history and presently fragile legal standing. Artisanal mining of the gold resource (as per the subtitle of this chapter), has been reviewed – noting complexities in the situation; the high expectations of those involved; and the sincerity of those intervening towards what ought to be done in the situation.

On the other hand, the very way artisanal mining is understood and defined within the literature stands against those expectations that it can be developed to meet national legislation or to meet international ethical trading standards. This section of the review, under the rubric ‘resource’, finds nothing in the academic descriptions of mining that differs from the ‘is’ of the situation described in Appendix One.

The tension between the present (is) and the hoped-for future situation (ought) is clear, and the calls by the academic community, the standards of the EFT community, and the laws of the Kenyan Government, are calls for the development of artisanal mining. The encompassing end of these calls for development is taken, in this thesis, to be justice; and the words, ‘development’ as the means and ‘justice’ as the end, are now investigated.

Thus, the contents of the next section review the intentions and ends of justice appropriate for mineral resources, and its means through ‘just development’.

2.2 Development and Resource Justice

The thesis investigates the intentions, means and ends of justice within the artisanal gold mining sector of East Africa. This section, reviewing just development, introduces theorists who would see it in the situation – its meaning over time, its critics, its values, its limits, bearing in mind its application to economic livelihoods based on mineral resource extraction. Theorists are concerned with how justice may be developed or thwarted through mineral wealth creation; they mostly deal with economic justice, whether it may apply to, or arise from, the extractives sector, i.e. the economic development of natural resources in equitable, just and fair ways. The section is divided into five subsections; the first of these introduces Aristotelian concepts of justice, justice arising from injustice, and economic justice. The second subsection considers the question of what constitutes a livelihood resource and who is responsible for its development. The third subsection notes that holism in development theory allowed concerns regarding ecology to be raised, and clarifies the difference between whole and holism. The extensive fourth covers a wide scope of relevant additional issues within development theory. The range of issues includes definitions of values; the use of religion; intelligent love; collective learning; and the so-called wicked problem in development. The final subsection enquires into resource justice and the economic livelihoods of people in the Global South. The section reviews development theorists with regard to the means (a just approach) and the ends (what kind) of justice that can be engaged by the situation.

Nederveen Pieterse defines ‘development as the organised intervention in collective affairs according to a standard of improvement’ (2010:3). This clearly fits the Standard as written goals for improvement (Fairtrade Foundation 2013), outlined in the section above. On the other hand, development theorists Michael Cowen and Robert Shenton refuse to provide any definition of development, stating that it is not their ‘task to find

an essential meaning for a word in everyday use' (1996:5). They note that others define development in multiple ways 'because there are a multitude of developers who are entrusted with the tasks of development' (1996:4). Yet, Nederveen Pieterse warns that 'development is a struggle over the shape of futures, a dramatic and complex struggle' (2010:xviii) that can only be exacerbated by concerns for just development.

An early philosopher of justice whose ethical theorising was recorded in writing is Aristotle, and his concepts (including those of economic justice) still inform the contemporary situation, as follows.

2.2.1 Justice and economics

In the Western tradition, discussions regarding justice in economic matters can be traced as far back as Aristotle in the fourth century BCE (Macpherson 1985; Hartropp 2007). Aristotle's own writings about justice in Book Five of *The Nicomachean Ethics* can be recapitulated as follows. In Book V.1, he argues for a general concept of just (the lawful and the fair) and unjust (the unlawful and the unfair) and 'since the unjust man is grasping, he must be concerned with goods – not all goods, but those with which prosperity and adversity have to do.' (Aristotle 1975:107) On the other hand, 'justice, alone of the virtues, is thought to be "another's good", because it is related to our neighbour; for it does what is advantageous to another.' Aristotle goes even further, 'this form of justice, then, is complete virtue... in relation to our neighbour. And therefore justice is often thought to be the greatest of virtues' (1975:108). He closes his introductory thoughts with 'Justice in this sense, then, is not part of virtue but virtue entire, nor is the contrary injustice a part of vice but vice entire' (1975:109), and this strong virtues approach by the Greek Philosopher/ Ethicist is the understanding used hereafter.

Wolfgang Sachs and Tilman Santarius believe that justice is beyond definition, although its features develop out of the resistance to injustice. Arising from the concrete histories of suffering and the counterforce to overcome injustice, the hidden ideals of justice (like love and freedom) drive the struggles and efforts towards a better world, an elusive utopia. Models of justice neither offer blueprints nor instructions, but articulate the resistance to injustice through principles which come into play, consciously or unconsciously (2007b:119). They claim that ‘indeed, no one knows what justice means, although what constitutes injustice is known to all ... Justice is the understanding that develops out of continual efforts to overcome injustice’ (2007b:119), and this will be interrogated during the course of this thesis. They argue that justice ‘has the same significance for the social world as the ecosystem has for the natural and language for the cultural world: it is the backbone of a lasting order’ (2007b:7). Their conceptualization of justice as the principled resistance to injustice further allows the advocacy and criticisms of artisanal mining (in Section 2.1) to be recast as matters of justice. The review will further search for a source of justice, other than this one proposed by Sachs and Santarius, in the theological literature.

Aristotle continued to consider particular forms of justice, of which two return to economics and prosperity. These considerations are the ‘beginnings of the two branches of the concept of economic justice that were more fully developed in medieval Europe, i.e. commutative and distributive justice’ (Macpherson 1985:6).⁹ He was concerned that once the intermediary merchant arrived with the power of financial capital, setting a price for goods and services was going to be determined by the market, whether just or not. C.B. Macpherson argues that Aristotle had made a distinction between two types of economy – between the household or simple market economy in which goods were

⁹ ‘Commutative justice relates to justice in ... production and exchange. Distributive justice relates to how income and wealth is allocated ... it concerns, broadly, justice in the allocation of the fruits of economic endeavour’ (Hartropp 2007:159).

produced and exchanged for mutual use; and a more advanced market economy. In the latter, this exchange was initiated by a merchant who could use his financial capital to buy for future sale at a profit and thus increase personal wealth. Macpherson believes Aristotle was quite right in seeing that the market had been freed from the customary social bonds of either an imperial or simpler society and to press for a separate concept of justice in the economy (1985:5–7). He goes on: ‘Aristotle's concern with the accumulation of wealth by the merchants was because it altered the relations of exchange and hence the distribution of income: it imperilled the livelihood, the material means of consumption, of the free citizens’ (1985:6). Economic justice raises ‘the ethical issues of how best to resolve conflicting individual interests which are the hallmark of the problem’ (Phelps 1973:9). Helen Stacy and Win-chiat Lee note that

discussions about economic justice are mostly about inequality of some sort ... (they) are often intertwined with economic theory. Just as abstract principles of justice cannot be disconnected from empirical realities, economic theory cannot be disengaged from economic reality ... When reality hits, as it has in recent years, it hits not only the economic theory, but also the theory of justice associated with it. ... the debates about economic justice ... typically concern what justification can be given to inequality, and how far that justification ought to go. (2013:vii–x)

Inequalities in the situation have arguably remained since Aristotle. Commutative justice concerns ‘relations into which people enter, in any society, in their capacities as producers or owners or exchangers of valuable goods or services’ and economic justice claims to regulate these relations ‘in the light of some ethical principle,’ it is ‘nothing if not a value-laden concept’ (Macpherson 1985:2). Such ethical principles and value laden concepts will be studied throughout the thesis, even where they go beyond economic justice, which is the subject of Chapter Five.

Recalling that this is a study into the economic livelihood of artisanal gold miners and the flourishing of their communities, the review turns to considerations of resources and development within the local context.

2.2.2 Livelihood and resource development

The economic question of what constitutes a mineral resource was initially examined in the section discussing those economics unique to mining. Here it was noted that the physical presence of minerals cannot be moved elsewhere yet attributing ‘resource’ to these deposits entails a descriptive evaluation depending on a variety of essentially economic factors. Erich Zimmermann noted the ‘word “resource” does not refer to a thing or a substance, but... is an abstraction reflecting human appraisal and relating to a function or operation.’ It is similar to ‘food, property, or capital, but is much wider in its sweep’ in (Peach & Constantin 1972:9). Avery Kolers, in his pursuit of who defines resource, seeks to empower the local community with ‘resourcehood’ which is granting those who have the moral rights to a particular territory the final say in what constitutes a resource (2012:278). Reflecting Zimmermann, Kolers argues that a resource is an ‘intention-dependent’ phenomenon (2012:273), so then the choice to exploit an orebody is to be determined in relation to other possible intentions. Still agreeing, he notes that: ‘Resources are not mere things but rather things under a description. Before a thing can be a resource we must adopt a certain stance towards it. The question is, whose stance is to be decisive?’ (2012:275). Caroline Sweetman and Maria Ezpeleta argue for the local alternative when evaluating resources, ‘The natural environment not only contributes to existing livelihoods, but offers a powerful frame of reference for human life, permeating the realms of spirituality and culture’ (2017:353). These local resource evaluations typically go beyond the narrow economic stance of mining examined in Section One and extend the quest into whose idea of resource is to be taken into account. Furthermore if the resource is to be justly developed then whose definition of development prevails?

For example, the Indigenous People’s Declaration on the Extractive Industries calls for ‘indigenous peoples development plans’ (Colchester et al. 2003:338). This is

because ‘we demand that our development be determined ourselves according to our own priorities. Sustainable development for indigenous peoples is secured through the exercise of our human rights...play(ing) our vital role in sustainable development’ (2003:340–1). Throughout the recommendations there are strong emphases on inclusiveness: our, we and us are words frequently used, as would be expected in participatory indigenous peoples’ development planning (2003:337–41). Their perspective on development parallels Kolars’ wish to empower indigenous intentions with regards to resource definition.

These initial enquiries into who defines livelihood resources and who plans for their development necessitate further reviews of development theory, as per the next two subsections on holism and values.

2.2.3 Whole and holism in development theory

There have been clear calls for ought to be done in the situation emerging from the reviews so far, including justice in local economies and self-determination; and this subsection is concerned with reviewing the concept of holism in development theory as the means of developing such justice (its intentions, means and ends).

Recalling Nederveen Pieterse’s concerns for development as a struggle, he divides the past two centuries into four eras with their historical contexts and political circumstances which allow an understanding of development as responding to the problems and to the arguments of the time. The first of these spanned over 150 years from the beginning of the 1820s to the 1950s and is now labelled as the modernist era. In the second era, post- modernist, social thinkers in the 1960s, notably socialists and nationalists, seriously questioned this approach arguing that far from development, the self-centred modernist approach by the powerful West led to under-development elsewhere. The third era since the 1980s, regarded as counter-revolutionary, inaugurated

neo-liberal actor oriented and human and value centred approaches to development. These concepts of complementarity, rather than exclusionism, ushered in the present (fourth) era, that of holistic development (Nederveen Pieterse 2001; 2010).

He argues that these long term trends in development theory parallel shifts in social science epistemologies (Nederveen Pieterse 2010:8). For example, John Hedley Brooke writing in 1991 was convinced this change towards holism was due to a change in values regarding ecology. 'The belief that reductionist accounts of natural phenomena must always be complemented by holistic perspectives has gained ground recently, largely through an awareness among the public of ecological interdependencies' (1991:334). Brooke argues that Fritjof Capra's *Tao of Physics* presents ecology as confirming a holistic vision and that the physicist believes our survival depends on 'values that have been largely eclipsed in the West' (1991:335). Brooke claims that because 'human values are often organically linked with religious beliefs, the latter can still be presented as relevant to the orientation of science and technology' (1991:336).

Towards this relevance in development, Nederveen Pieterse believes that there is a need to distinguish between wholeness and holistic. Wholeness is woven into personal experiences of life's transitions, of love, of pain and healing, and other peak experiences. It is evoked in mysticism, myth, and religion and thus includes older sensibilities and spiritual criteria:

Religion is replete with 'whole' metaphors, such as the tree of life, wheel of life, dharma, 'Thou art That', and other references to the inner interconnectedness of phenomena. Paradise is a state of wholeness and the fall means the loss of wholeness. Paradise regained is wholeness regained. In Christian theology 'the whole of creation' envelops the non-human world. ...Wholeness includes 'life beyond.' (Nederveen Pieterse 2010:149)

These are very important contributions to the understanding of wholeness as used in the religious or theological pursuit of wisdom in this thesis. He continues, on the other hand, that in holism there are programmatic elements which include systems thinking and scientific re-combinations of fragments in new totalities. Both are relevant angles, each with its range of applicability (2010:148–9). Nederveen Pieterse believes that

approaches to development are 'ill served by binarisms. What is needed is a combination of wholeness and difference, as in Vincent Tucker's synthesis' (2010:157). He claims that Tucker combined the concepts of wholeness and holism (in development) into critical holistic development. Combining these allows for the introduction of 'critical' as 'expressing or containing an analytical evaluation' (Pearsall & Trumble 1995) into holistic development. Nederveen Pieterse adds that it 'is an uncommon synthesis' because 'criticism and holism refer to different modes of cognition.' He believes 'this makes it a welcome synthesis: without a critical edge, holism easily becomes totalizing, romantic, soggy; and without holism, criticism easily turns flat, sour' (2010:146). He continues 'development is too complex to allow partial approaches to have their way ... Combining different angles and approaches yields an holistic assessment of development ... (Preferably) critical holism, lest holism become an all-purpose way out of the perplexities of development' (2010:xvii). Nederveen Pieterse goes on to describe 'critical holistic development' as including 'macroeconomic management, global democratization and planetary ethics.' He believes that it must also include such 'non-material dimensions, as in cultural development' and that by encompassing planetary ecology, development can no longer be anthropocentrically focussed (2010:164).

Whilst this looks at first sight as a list expanding the concepts of holistic development, these examples (management, democratization, ethics, culture and ecology) are value laden. Nederveen Pieterse also notes how these critical holistic approaches to development must now cover a wide terrain of actors thinking for themselves. These include institutions and frameworks going both within and beyond the State, which is the traditional unit of development. In other words as well as being State-led, development is market-led (referring back to the neo-liberal approaches of the 1980s) and society-led, and may require 'intersectoral partnerships' (2010:16-18).

This acknowledgement that critical holistic development is based on a variety of values, is not a surprise when that development is aimed at what ought to be realised in a situation, even though it necessitates struggles over these values. The question of values, then, needs further review, as in the next subsection.

2.2.4 Additional issues within development theory

Critical holistic development is accepted as part of the approach to be used in establishing what should be done in the situations observed. However, Nederveen Pieterse warns

Vincent Tucker's critical holism cannot be readily translated into a general theory of development because, unlike in health, there is no holistic practice in development. ... The appeal of critical holism is that it places holistic theorizing and practice in relation to collective existence on the agenda and thus renders it imaginable: at least steps can be taken in its general direction. (2010:157)

It is the taking of steps in the direction of critical holism that is attractive to this project and the following relevant concepts from the literature nuance this understanding of critical holistic development. This subsection investigates additional theories of development leading to the means of justice. Broad approaches to the situation include religion in development; people's wellbeing; and collective learning; which will be used in later chapters.

2.2.4.1 Values when considering development and resources

The issue of underlying values in development which became explicit in the second era was analysed by Cowen and Shenton. They say 'values may represent an ideal as an aspiration to construct a future which is an improvement of the present' (1996:444) but the danger lies when they 'purport to be "abstract objectives" to express a speculative prospect of improvement from the standpoint of the present' (1996:443). Where development is proposed, or activities are conducted in the name of development, values contribute to both the 'is' and the 'ought' of the situation, such as the one described in Appendix One. When these values are made explicit, development moves

towards the critical in holism, and such critical holism has been investigated above for its role in just development.

Secondly, resources have value, gold is a valuable natural resource which occurs with other natural resources, within the surrounding ecological system, which have their own value. The dominant imposition of gold mining can devalue other livelihoods: ‘It frequently has negative environmental repercussions, often damaging the health of the local ecology, and may affect other rural livelihoods, such as farming and fishing’ (Eftimie et al. 2012:3). Celia Deane-Drummond is helpful in differentiating values within nature:

If we regard nature as a resource to be managed for human interests, it has *instrumental* value. If we regard nature as having value in and of itself it has *inherent* value... with the assumption that a valuing *subject* is present. ...If we regard nature as having *intrinsic* value, this is independent of humans, or their presence as a valuing subject. (1996:70)

She calls for consideration of a fourth value, for the ‘system as a whole ...also known as *systemic* value, in addition to the value of particular species’ (1996:78). All four of these values inform the research, and are linked with religious beliefs in the thematic chapters.

2.2.4.2 Religion and development

Allen and Thomas claimed that ‘the study of development....necessitates the study of shared values of all kinds...Religion and kinship are just as significant as economic transactions’ (1992:337). This broadening of the approach into values led to both research into and theories about the role of well-being in society and whether a sense of well-being could be the basis of an evaluative capacity of development (McGillivray 2006; McGillivray 2007a; White & Pettit 2007; Scott 2012). The roles of religion and well-being are researched with both male and female miners and these findings are drawn upon in Chapter Four investigating socio-economic aspects of miners’ livelihoods. How these modes and values of development apply to the ends of justice and the means of just development will also be discussed in later chapters.

Bryant Meyers believes that, also during the 2000s, a shift in thinking about religion and development began, at first, it was recognition of an instrumental approach i.e. faith might be useful to achieve the ends of development. Then he credits Sen's emerging human capability movement as validating religion's role as a source of values without which wellbeing was impoverished (2010:126). These emphases not only allow for a focus on human capability development and wellbeing, but take into account 'that most of the poor with whom they (development organisations) work have deeply held religious beliefs and practices' (2010:126). The research is intimately concerned with the Christian beliefs of the recipients (and where appropriate, the providers) of development in East Africa's artisanal gold mining sector.

Next, the concept of intelligent love, which was discovered in the literature, is reviewed within the ideology of values, religion and the development of justice.

2.2.4.3 Development and intelligent love

The literature review of just development approaches turns to the exhortation by Louis-Joseph Lebret to use intelligent love. Development theorist Denis Goulet approvingly quotes Lebret whose 'indignation over injustices' led the latter to proclaim the need for 'intelligent love.' According to Goulet, this means 'love without disciplined intelligence is inefficient, naive, and in its bungling good intentions, catastrophic. And intelligence without love breeds a brutalizing technocracy that crushes people' (Goulet 1995:193). Here is the idea that love can be involved in development and that development interventions, especially by a faith based agency, need to be approached through love, the greatest of the triad of Biblical values (1 Cor. 13: 13). Father Lebret, a Dominican social and economic development theorist, builds his argument on a plea which he seems to have witnessed in 1953. He writes that an official of a Southeast Asian country inquired of an American development expert 'we asked you for hope, understanding and love, and you gave us money and technology. Are these the things which account

for your country's greatness?' (Lebret 1965:169). Lebret argues that according to the Bible, Christian presence in the world is 'a leaven' and where Christians are personally concerned, they are to 'work courageously and yet modestly by seeking the kingdom of God with intelligence and zeal' (1965:202). The solution to the world's problems can only be founded on love, and genuine love has a universal quality, i.e. it is always possible to contribute to the betterment of humanity, to ennoble mankind as a servant of justice (Lebret 1965:213). Remembering Nederveen Pieterse's comment about development's struggles over futures, Lebret offers:

However much it may be concerned with the divine, the Christian message is also deeply attached to humanity, because it contains the commandment of love: "Love one another as I love you." This is the message of Christ, who loved his own people and all humanity to the point where he died for them. ... Respect for man, and for every man, an active respect that is not satisfied with abstention from evil, but brings about the establishment of the common good on all levels of human solidarity – this is the reply to mankind's demands for the future. (1965:198)

At least in this work, it is not Lebret who pairs intelligence with love, but it is clear that Goulet's use of this phrase offers a way forward for the practices of faith-based agencies. Over fifty years have passed since Lebret was translated into English and more than twenty since Goulet championed his cause for establishing the common good, within demands for development. Recalling Cowen and Shenton's distinctions, intelligent love is not the object of development; it should characterise the means of development, enabling the values and ethics of critical holism.

The following concept of collective learning is reviewed for its suitability as the final element of critical holism.

2.2.4.4 Collective learning and development wisdom

Critical holistic development implies a collective approach to development; for which Colin Leys claims that 'If development theory is to be useful and interesting again it must ...consider ways and means ...to pursue social goals through the collective efforts of the societies and communities to which people belong' (1996:vi). The verb 'develop' derives from its French roots as the opposite of envelop (to wrap or cover), and can be

treated analogously with unwrapping or discovering or revealing what is already within.¹⁰ This approach warrants the uncovering of already-held ideas of miners regarding their own development. Critical holistic development theory meets the criteria of a collective approach but Nederveen Pieterse goes further stating that if the meaning of development is stretched to its fullest, then it is a process of collective learning through humans managing themselves ‘according to the most comprehensive standards conceivable and practicable’ (2010:164). By this criteria, collective learning (through collective efforts) can be regarded as a development goal, but is more likely to be a by-product, if the objective of development is something more concrete, such as fairly trading gold from ASMOs in East Africa, as discussed in the following chapters.

In terms of collective learning and the development agency, David Korten is sure that until the assumptions underlying the organisation’s choice of intervention are made explicit ‘they cannot be tested against experience, essentially eliminating the possibility of experience-based learning’ (1990:114). Interventionist agencies should welcome these concerns by development theorists in terms of collective learning. This learning should, in the words of Goulet, ultimately lead to:

new wisdoms of development... unifying visions, respectful of cultural and ideological diversity about the meaning of historical change processes. Indeed, no new rules for resource transfers, no crash programs in technological modernization, and no new international economic orders can dispense with the arduous task of creating new developmental wisdoms. (1995:166)

This call to extend development theory into practical development wisdom, however arduous was made over two decades ago and remains a contemporary quest for development agencies seeking to intervene in the situation, outlined both in Section 2.1 above and in Appendix One.

¹⁰ From the French ‘*velop*’ – wrap up – veiled, concealed – requires unveling, unwrapping, revealing, unconcealing. late 14c., *envolupen*, "be involved" (in sin, crime). By the 1650s, "unroll, unfold," from French *développer*, replacing English *disvelop* (1590s, from Middle French *desveloper*), with the sense "bringing out the latent possibilities," from Old French *desveloper* "unwrap, unveil; reveal the meaning of, explain" (Prince 2017:15).

While positive elements of just resource development theory have been reviewed, a caution from planners of infrastructural development needs consideration.

2.2.4.5 The ‘wicked problem’ in development

Another find in secular development theory is that of the ‘wicked problem’ as described by Horst Rittel and Melvin Webber. This refers to the kind of societal problems that planners (or developers) deal with and include nearly all public policy issues (such as those covered in this thesis). The term wicked is not used because the problems are ethically deplorable but because they have certain properties that affect their solution. For example, they have no definitive formulation; nor do they arrive at a definitive solution; their solutions are not right-or-wrong, but good-or-bad; there are no tests that the solution has been arrived at; there is no chance of trial-and-error because every attempt has a significant impact; and every wicked problem is essentially unique. Each solution can be considered as a symptom of another problem (as in a crossword puzzle, where each attempted solution affects other possible solutions). A wicked problem’s existence can be explained in numerous ways, yet this explanation determines the nature of the problem’s resolution; meaning there are no sets of describable solutions that can be enumerated prior to implementation; and finally, the planner (or developer) has no right to be wrong (1973:160–6). These infrastructural development planners are focussed on the wicked problems that arise when attempting to build or engineer solutions which will leave the affected public along a spectrum between satisfaction and dissatisfaction (APSC 2007). These descriptions of what constitutes a wicked problem also apply to the development of artisanal mining, as will be demonstrated in the thematic chapters.

The final subsection moves away from development theory and reviews the theoretical concept of natural resource justice, in preparation for its role in defining mineral resource justice, as per Chapter Seven.

2.2.5 Livelihood and resource justice

Within the reviews of just resource development, there is a further discovery in the literature that appears to cover many of the issues raised thus far (particularly the matters of natural resources and livelihood), and has been labelled ‘resource justice’ by Sachs and Santarius in their book *Fair Future* (2007b:passim). With regard to the future of resource consumption, they argue that ‘powerful societies can opt either for preventive warfare or for preventative justice’ (2007b:8). This choice is based on their analyses of resources in the global situation, and is reflected in the subtitle of their book *Resource Conflicts, Security and Global Justice*.

Their list of resources includes the atmosphere, wetlands, soil and land, water, biodiversity in animals, plants, forests and fishing, as well as energy such as oil, and (for this thesis) non-renewable metal ores and other minerals (2007a:22–4, 39–51, 85–107). Their assumption is that natural resources exist apart from humanity and constitute the physical environment in which the human ‘technosphere’ affects the ecosphere (2007a:25). Regarding resource conflicts and security, they posit a ‘threefold ecological justice’ to preserve the planet’s hospitability (2007b:26). The first is concerned with non-human living things, the second with later generations and the third with disadvantaged people and countries. These can be related to artisanal gold mining. While Sachs and Santarius argue against the unjust economics of international investment into local resources, the products of artisanal mining ‘are also incorporated into the worldwide flow of resources’ (2007b:132). Secondly, this scale of mining as livelihood results in landscapes that are degraded or desecrated, threatening the future ‘foundations of life for local communities’ (2007b:132). Sachs and Santarius ask how much should be taken from the life-serving accomplishments of the biosphere for well-being, without restricting the rights of other present and future earth-dwellers. ‘These are the issues of ecological justice in general and - in relation to present-day global

society - of resource justice in particular' (2007a:29). The artisanal mining research community is unstinting in its criticisms of the ecologically destructive nature of artisanal mining, so these general principles can be applied to the situations observed in this study.

Sachs and Santarius develop their rights and duties basis of justice using 'two basic dimensions' which are recognition and distribution (2007a:119). The first dimension, justice as recognition involves 'the recognition of others as members of society with full rights' because often the quarrels over natural resources include striving for self-affirmation and participation and the possession of resources can be a material expression of recognition. The foreigner, the rival who thinks differently is ever coming closer and triggers the desire for demarcation in this age of globalization. Recognition is empty and dishonest without a share in the material possessions of a society, so the second dimension in resource justice is distribution.

According to them the second dimension, justice as distribution, is not to be seen in terms of welfare but in the distribution of power 'for widespread poverty stems less from a lack of money than from lack of power.' This distribution of power begins with an allocation of livelihood rights within natural habitats, particularly for those whose subsistence depends on intact ecosystems that provide food, clothing, housing and medicine. As economic spaces, these natural habitats provide essential resources for both subsistence and market production. The conflict between subsistence and market economies is at the root of the conversion of local habitats for plantations, water reservoirs and mining so that metals and electricity can be delivered to industry with water and food delivered to cities and distant consumers. Livelihood rights require that society makes the means of life available to indigenous peoples and the poor (2007a:119-32).

Their thinking recalls sub-section 2.2.2 which calls for the future of mineral resources and development to be decided by the local indigenous people affected, i.e. a number of theorists seem to be in agreement with this approach to development. Importantly for the thesis, Sachs and Santarius have elevated this approach from matters of resource development to resource justice.

This section has widely reviewed theoretical literature regarding resource justice; developing economic livelihoods in a just manner; and the means of just resource development. The broad understanding of these issues within the literature can be brought into critical conversations establishing what ought to be within the situations observed in East Africa. Furthermore, the discoveries of critical holism, intelligent love and development wisdom provide means that can be applied in the transformation between the present and the ideal situation regarding justice within the sector. The review has included a wide group of secular researchers and theorists whose insights are integral to a comprehensive understanding of the intentions, means, and ends, of justice for the situation.

Swinton and Mowat call for theological reflection in their third stage (2016:91) and as a white, African Christian mining engineer, the quest within the literature for perspectives to address the situations observed, is thus far incomplete. Therefore, the next section reviews the relevant theological literature that can be critically engaged with the situation.

2.3 Western Text-based Theologies

The following Christian theologies either supplement or provide alternatives to the concerns raised thus far, and link anthropocentric livelihoods and planetary ecology through a cosmic view, accepting that humans and their ecosphere are situated within a creation of the Christian God. The thesis follows Jeff Astley's understanding that 'theology may be taken simply as a name for one's understanding of God and the meditative reflections that lead to that understanding' (2002:54). More graphically, H.A. Williams claims in his foreword to Vanstone's volume that theology, properly so called, is the record of humanity's wrestling with God (2007:xi).

The following subsections review theologies that have a bearing on the situations observed, firstly those of the justice, mercy, love, and shalom characteristics and purposes of God. Secondly, the wicked problem which lies behind the development of justice is further complicated by sin, so theologies of sin are important for the thesis, especially in contrast to the just, righteous, merciful and loving character of God, adumbrated in this section.

2.3.1 Theologies of God's character

The Psalmist records God as wishing 'Oh that my people would listen to Me, that Israel would walk in My ways' (Psalm 81:13 NASB) and there are four of God's 'ways' that can be brought to critical conversations about understanding and developing justice within artisanal gold mining. Three are from Old Testament theology, these are '*mishpât/ sidiq*' (righteous justice); '*chesed*' (faithful mercy); and '*shalom*' (holistic peace) (Foster 1999:167).¹¹ The fourth is love, and these characteristics and purposes of God will be reviewed here, with each being drawn upon in the later thematic chapters.

¹¹ The problem with this narrowing down to a few Biblical concepts is that the broad narrative of scripture documents life with God in its entirety, as Foster argues: 'We want absolute truth nailed down in

2.3.1.1 Mishpât/ sidiq

Sachs and Santarius argued that concepts of justice are developed from universal experiences of injustice (2007:119) and the review now follows Andrew Hartropp's considerations of the divine source of justice. His descriptions are succinct and easily accessible for an ordinary theologian, such as I am.

One Jewish translation of the Hebrew word *mishpât* into English is justice, such as in Psalm 101:1 'I will sing of faithfulness and justice; I will chant a hymn to You, O Lord' (Greenberg et al. 1997:118). However, the Hebrew word is also translated, elsewhere in their version of the Book of Psalms, as judgment, act justly, what is just, what is right, judge rightly, rule, executing doom, and in the right path (1997:passim). Hartropp chooses Genesis 18:19 where Abraham is called 'to keep the way of the LORD by doing righteousness and justice' (NASB 2002) where *sedaqah* is translated as righteousness and *mishpât* as justice (2007:15). He helpfully differentiates these words:

mishpat is what is done, whereas *s-d-q* is the quality that fills what is done. Thus *s-d-q* is more a living thing, whereas *mishpat* is more a doing thing. Neither is static: rather, both are dynamic ideas; but within that similarity, a living/doing distinction seems to be present. ... (Biblical) references ... bring out righteousness as a living quality - whereas (they use) *mishpat* in teaching that the Lord requires people 'to do justice' (Mic. 6:8) and in observing that the wicked 'refuse to do what is just' (Pr. 21:7). (2007:16)

Even though there are these living /doing distinctions, Hartropp believes there is one reality - 'just righteousness', or 'righteous justice' - expressed in two slightly different ways (2007:17), justice is part of the outworking of righteousness (2007:26). The argument is that concepts of justice are rooted in the very being of God e.g. in Deut. 32:4 'all his ways are just' and in Ps. 111:7 'the works of his hands are faithful and just.' Not only this, but whilst the ultimate foundation of justice is God's being and character 'God is not abstract or static but active and dynamic' therefore 'this dynamic notion of justice contrasts sharply with conceptions of justice as, primarily, impartiality, or an abstract notion, or a state of affairs' (2007:30). This nuances simple ideas of

neat propositional form; the Bible gives us a vast sprawl of Divine – human history' (Foster & Helmers 2008:84).

unchanging, impartial and abstract justice. As far as this thesis is concerned, there can be no static universal application of Valerio's assertion 'fair trade is economic justice for the poor' (2013:84), it must be dynamically approached in each relationship.

Hartropp is sure that 'justice is *treating* people in the way God desires and requires: appropriate treatment...And God sets the standard for human beings' (Hartropp 2007:30). He emphasizes that the biblical material is a framework of principles, i.e. scripture does not give principles that are independent of one another, but rather they are a package, not a blueprint. Where these principles require application in everyday life, then Christians are effectively 'free' to decide how to apply them. This is a freedom and a responsibility arising from the New Testament 'in the sense that God has not chosen to give detailed and specific commands for each and every situation' (2007:94). Biblical 'material, handled in a balanced way within a careful framework, opens up important and fruitful lines of thought and application' (2007:40).

Based on the foregoing, Hartropp then proposes a definition that justice enables human flourishing through appropriate treatment, 'usually in a relational setting, according to the norms commanded and set by God in each particular case' (2007:27). This definition of justice is used in the discussions regarding artisanal gold mining in East Africa.

2.3.1.2 *Chesed*

The word *chesed* occurs 245 times in the Hebrew Bible, where it is always a noun never appearing a verb and is applied to relationships between God and humanity and between persons (Glueck 1967; Ndungane 2008:14; Hârlăoanu 2009:57–63). 'Usually translated "steadfast love", "kindness", "loving-kindness" or "covenant loyalty", *hesed* is not an abstract ethic but the underlying value of God's character¹² and a high ideal in human virtue' (Bruckner 2003:228). It is his 'unrelenting love' (ibid:228) in which 'the notion

¹² With this attribute of God in mind, it is hard to see how the blessing of easily mineable gold can be regarded as a curse and yet apparently it is (Mitullah et al. 2003:289).

of grace rather than obligation is prominent’(Hawthorne et al. 1993:S.601). It is chiefly used of God’s faithfulness in the relationship with his people, more than an un-obliged reaction to a broken covenant, *chesed* is the underlying desire that leads to the initial cementing of a relationship. It restores this covenantal relationship through the forgiveness, deliverance or redemption that arises out of a merciful heart (Williams 1992:541–2). The persistent refusal of God to wash his hands of his faithless and erring people becomes ‘the essential meaning of the Hebrew word’ (Snaith 1944).¹³

Archbishop Njongonkulu Ndungane argues:

Therefore for us to show *hesed* to others is to declare our commitment to them in love, and our loyalty, even respect, for them. ...we can see this as reflecting the need to consider ourselves partners with, rather than benefactors towards, the developing world. (2008:17)

His ideal of partnering will inform the ongoing post-doctoral work with artisan gold miners in order to demonstrate solidarity. David Sheppard believes that if we ‘put ourselves into the shoes of the poor and disadvantaged, we may see how matters appear to their consciousness...issues to do with the righteousness of God which has a persistent tendency to favour those at a disadvantage’ (1983:225). A few months of fieldwork hardly suffices to be in the shoes of miners, but both their ordinary and Western text-based theologies have supported Sheppard’s assertion. ‘*Hesed* is the disposition of one person towards another that surpasses ordinary kindness and friendship; it is the inclination of the heart to express “amazing grace” to the one who is loved’ (Heath 2003:375). *Chesed* has been shown to be the loving-kindness that underlies covenant relationships between God, Israel, the church or the poor. Both *mishpâṭ* and *chesed* are placed together in the aforementioned Psalm 101:1, ‘I will sing of your faithfulness and justice’ (Greenberg et al. 1997:118), and according to Paul Ramsey, they are not easily separated (1950).

¹³ cited in (Williams 1992:542).

The Old Testament *chesed* characteristic of God is demonstrated more fully in contemporary concepts of love, for which extracts from theological literature are now reviewed.

2.3.1.3 Love

Justice as an end is insufficient because as Gerald Vann succinctly states ‘justice is not enough...therefore we do not think in terms of mere justice’ (1956:120). He continues that during any period of the world's history there has been injustice between men who fail to realise ‘the divine will for the world, and for this you would always be bound to work and pray’ (1956:98). For him ‘the moral life is a question first of what we ought to be, and only then, in consequence, of what we ought to do – and only thirdly, by implication, of what we ought not to do’ (1956:34). This segues into his admonition that the Christian zeal for justice is ‘meaningless unless we ourselves are just: and to be just is to do just things justly – the manner is important as well as the deed, the means as well as the end’ (1956:99). Vann believes that for the Christian, morality is religion, religion is love ‘and love is not a negative but a creative thing’(1956:34). Fulfilling the requirements of the virtue of justice is insufficient because Christianity is not justice alone, but love, a ‘love that is an insatiable desire for justice’ (1956:98). Here is a clear link between moral living, justice and love, all of which are important for the conversations which follow.

Hartropp believes justice and love (or justice and mercy) go together but are not synonymous. Because ‘love involves an active desire for the wellbeing of the neighbour ...it goes deeper and further than any norms would require or suggest. Nevertheless, love and justice, in a biblical understanding, are much closer than is generally conceived’ (2007:70). Thus the treatment of people through love and God’s relational ideals for justice both go further than abstracted norms require and the coupling is

integral to the understanding of mineral resource justice, with which this thesis is concerned.

The review of Western text-based theologies of God's character and purposes closes with the most encompassing concept, that of shalom.

2.3.1.4 Shalom

Following Swinton and Mowat's third stage of theological reflection, this review examines another of God's ways, shalom,¹⁴ i.e. the goal that artisanal mining communities can work towards, if not yet live in, a situation where all species flourish under God. 'The Hebrew *šālēm* (from which comes the familiar Hebrew noun *šālôm*) literally refers to being uninjured, safe and sound, or whole' (IVP Electronic 2007:S632). This is 'a full bodied concept that gathers in but is much broader than peace, *shalom* means wholeness, unity, balance' (Foster & Helmers 2008:171). Shalom is the Old Testament theological ideal which encompasses wholeness and 'is perhaps better translated into contemporary English as 'flourishing' than as 'peace'. To experience shalom is to flourish in all one's relationships - with God, with one's fellow human beings, with the non-human creation, with oneself' (Wolterstorff 1995:19–20). Franciscan mission theologian Bernard Przewozny sees a call for Christians in mission to develop and implement new models of 'humankind's relation to the environment and natural resources ... to offset the abuses of a consumer society' (1991:257).

Yet as Pope Francis affirms, 'there can be no ecology without an adequate anthropology...Human beings cannot be expected to feel responsibility for the world unless, at the same time, their unique capacities of knowledge, will, freedom and responsibility are recognized and valued' (Francis 2015:60). He believes that 'our relationship with the environment can never be isolated from our relationship with others and with God' (2015:61) and claims 'social love is the key to authentic

¹⁴ Shalom, being in current, common use is not italicised; unlike *mispat/sidiq* and *chesed*.

development’ and ‘social love moves us to devise larger strategies to halt environmental degradation.’ Francis maintains a civilization of love makes itself ‘felt in every action that seeks to build a better world’ and is to become the ‘constant and highest norm for all activity’ (2015:108). The coupling of intelligence and love is picked up in his desire that ‘Human beings, endowed with intelligence and love, ...are called to lead all creatures back to their Creator’ (2015:43). The goal is set for artisanal mining communities to work towards, if not yet live in, a state of all species flourishing under their Creator; the reason why shalom can be broken and needs to be restored, is now touched upon.

2.3.2 New Testament theologies of sin

This subsection briefly investigates theological and biblical concepts of *hamartia* translated from the Greek into English as ‘sin’, with a view to how they might partly contribute to understanding justice. Sin also has a bearing on an extended understanding of wicked problems, not just in themselves, but also in implementing proposed solutions with fallible miners and their communities.

Derek Nelson offers an understanding of the Greek used in the bible noting that ‘by far the most common NT word for sin is the Septuagint translation of that word, *hamartia*. This word has a long history in Greek thought’ (2011:29). It is used to describe a spear that is thrown but does not hit its mark (in Homer's *Illiad*) or to describe a traveller who loses his way (by the Greek historian Thucydides). In the NT someone who has missed the moral and religious mark, or lost the way of righteousness is described as *hamartalos* i.e. a sinner. The NT also uses words ‘such as *parabasis* (transgression), *parapton* (falling aside), and *parakon* (to turn one's ear away from). All have the sense of turning away from the proper orientation or path’ (Nelson 2011:29). Whether in Greek or biblical thought, *hamartia* insists that freely made choices lead to

consequences of personal shortfalls or turning away from the proper path that become character forming over time. Yet, the New Testament concept of sin, as will now be shown, also allows for personal regeneration.

Hugh Connolly argues that, in spite of the contemporary awareness of how humankind is conditioned by social, cultural, psychological and even religious factors, the concept of sin is a positive affirmation of what it means to be human. His theological position ‘accepts the human condition as fractured but not destroyed’ (2002:72). Not since the time of Aristotle (Aristotle 1975) have human actions been understood as isolated or disconnected series of good and evil deeds, they are usually expressive of a person’s moral character. One is moulded by the freely adopted responses to the challenges and decisions in life, so sinful behaviour becomes a reality from the ‘heart’, the inner attitudes expressed through actions and interactions. Personal orientation towards good or evil, openness or selfishness, towards grace or sin and ultimately towards or away from God is made in harmony or dissonance with the core stance underlying ethical choices (2002:74). Sin as personal, interpersonal and relational is given a dynamic reality which emerges from the gradual discovery and realization of self in response to God and neighbour. What is important is the existential response of the inner centre of the human person to choose against the sources of moral evil (2002:73). Moral ideals and virtues grow progressively via faith and failure learned in community, fellowship and fraternity i.e. through key relationships with the Other and others that are foundational to being persons on the path to maturity (2002:70–1). Human beings are not merely puppets succumbing to all kinds of pressure; this does not erase personal responsibility for sin. In fact, the insistence on personal capacity for sin and to, potentially be set free of it, is a positive statement on liberty and dignity (2002:115). Connolly’s perspective on sin affirms that each human being has the potential to discover the grandeur of human vocation, as per Agricola’s dignified miner

(1950:24). Also, the concept that persons are free to make ethical choices lies behind the entire commerce in fair trade goods and other initiatives desiring responsible consumer behaviour.

Josef Pieper realises that humanity's decisions against God (as the great *hamartia*) require 'one act alone: the gift of forgiveness freely bestowed on us by God himself' (2001:97). Connolly argues that the mercy and forgiveness which are God's characteristic reaction to sin constitutes the good news (the *evangelion*) and are based on His *chesed* or attitude of compassion, sympathy and tenderness (as discussed below). Even when disrupted by sin, God constantly offers forgiving love to save, reconcile and heal damaged human relationships whether with Him, or between each other. Thus the centrality of forgiveness in overcoming sin is of paramount importance in the Christian story (2002:126). The next stage is the reparative, restorative, healing or 'making whole' effect linked to the forgiveness of sins (as per the healing of the paralytic by Jesus in Mark 2:5-12 or the instruction in James 5:16). Connolly sees this as a change of heart (based on the Greek *metanoia*) and that this conversion must be internalized if it is to be genuine and it must be Christ-centred. The death and resurrection of Jesus is the paradigm for all disciples, i.e. the initial sorrow and suffering allows insights into our relationships to others and God, and after the initial dislocation and confusion comes new focus, direction and meaning in life. This re-forming and re-shaping as an interior transformation, a fundamental change of attitude, is revealed in congruent action. In other words conversion needs to be total and integral (2002:130–3). Connolly insists this must be 'sincere and expressed in a new and real concern for justice' (2002:128) which is a significant outcome in the context of this thesis. He cautions that, this is a lifelong task to be understood as a process and not as a simple experience; which is not capable of being taken alone, but in communities of faith. True community, belonging and solidarity cannot be bestowed artificially; they come about through inter-

connectedness with other people. The journey towards unity, solidarity and respect for creation is made in faith, hope and love because God's itinerary is neither predetermined nor mutually agreed. It renders us open to the mystery and adventure of discovering God, others and oneself. The baggage of sin is left behind as the world becomes a place where a compassionate God reaches out to all creation (2002:139–43).

The theologies that apply to the research have been reviewed in this section; they are the final stratum sought for, which lies behind the means of just resource development towards the ends of justice. The characteristics and purposes (often interpreted as 'ways' by these theologians) of the Christian God will inform theologically based approaches that follow in later chapters.

Chapter Conclusion

The search in the literature has been for relevant issues, themes, useful approaches to development, appropriate characteristics of the Christian God, and other significant concepts within the apparently disparate writings of international development organisations, ASM academics, theoreticians, and theologians. The thesis enquires into just resource development, with respect to artisanal gold mining as livelihood for communities. As a result, theories of justice regarding minerals, resources, and development have been reviewed, followed by theologies applicable to the thesis. The chapter has reviewed these three major concerns of the thesis: firstly, the situation regarding artisanal mining livelihoods; secondly, the means of just resource development; and thirdly, what the ends of justice may mean in theory and theology.

Research into artisanal mining concludes that there are shortcomings within this sector needing further development. In response to the need, fair trade organisations are intervening to mitigate the economic, environmental, social, and governance impacts of artisanal gold mining. These outsiders are seeking to assist economically through their good intentions of ethical and fair trading, but only once improved standards of responsible production have been adopted as policies, and then implemented by ASMOs. Fair exchange approaches have been lauded within concepts of resource justice, as suitably ethical in building future models for sustainability within international trade. These claims will be investigated in the thematic chapters which follow.

Efforts at development have continued over the past two centuries, and contemporary approaches to just resource development include concepts of holism and wholeness. In the present era, resource development could be approached holistically, which both mandates justice in trading and warrants faith based approaches. The question of justice was first elevated to the global arena in terms of fair trade and was then raised to a

theological concern as a characteristic of the Christian God. Faithful or theologically based approaches seek to honour those characteristics of the Christian God that lead to justice, mercy, love and the flourishing of all species. Such approaches need to identify values; and be based on faith, critical holistic development, intelligent love, and development wisdom.

Following the three stages of the practical theology model, the literature review has moved the entire research project starting from constraints in the artisanal gold mining sector (Stage One) through social science theorising (Stage Two) to the emphasis on all species flourishing under God (Stage Three). The ends of justice in the development of mineral resources became more encompassing in terms of the beneficiaries of flourishing, and therefore how the means of reaching justice are to be approached.

No matter how thorough, well argued, ethical, or theological; the perspectives from the literature are one-sided – the views of Side A. The ordinary theologies, ethics and practices of artisanal gold miners in East Africa i.e. Side B, need to be researched, in order to provide alternative perspectives on the situation. Only then, can arguments be made for the intentions, means, and ends of justice that are appropriate for the sector. These will be constructed from critical conversations between the primary sources of Side B and the above secondary sources, in thematic chapters that respectively deal with social, economic and environmental dimensions of justice.

The next chapter, Methodology, reviews suitable methods for ethnographic research, with particular details of the fieldwork placed in Appendix Two. The findings from field research will be used in later chapters, working towards a definition of mineral resource justice and the appropriate means of just resource development.

Chapter Three

Methodology: Prospecting for Gold

Introduction

The literature review concluded with a call for field research into the ordinary theologies, ethics and practices of the artisanal mining livelihoods pursued by Christian artisanal gold miners in East Africa. The call for primary research necessitated research into ethnographic methods (and their warrants) that may be appropriated for fieldwork and this chapter reports on the search into relevant methods and methodologies. Appendix Two further documents the approaches undertaken and work done, during the seven fieldwork trips, over a total of 24 weeks in the field between 2011 and 2017.

Mining God's Way was conceptualised in the early 2000s in Zimbabwe, but the research journey as a PhD project began with the scoping visit to Kenya in 2011 accompanying Valerio on his visit to help MICA export gold to an ethical High Street jeweller. Out of this visit, three pursuits were followed and the first of these was to spend 2012 working with him to set up an enterprise that would partner MICA financially. The second line of research started with a visit to Zimbabwe to investigate the GoldKacha ore concentrator as a step towards mercury-free extraction of gold. The third was reading in the libraries of Oxford towards understanding wellbeing, philosophical hermeneutics, and cross-cultural research, in particular the Luo culture; planning to conduct the primary research as a participant observer.

In 2014, I returned to Migori County for an extended research period of ten weeks, during which time I adopted a phased approach to my field work, moving dynamically from the stranger (observer) to the trusted collaborator (participant). This movement was based in the social cues exhibited by the miners, interpreted by me, and allowed me to learn and respect their techniques of mining with minimum mechanisation, as

detailed in 3.2.1. Field work notebooks were filled with descriptions of their daily gold mining livelihoods and reasons for their workplace activities. Using the snowball technique, members of MICA introduced me to numerous local officials concerned with monitoring artisanal mining, both gold and copper.

The observer to participant field work method was not used in the three other countries of research e.g. Zimbabwe, Tanzania and Uganda. Time was too short in the first two locations (each a matter of two weeks), and my reputation in Uganda (as a Christian concerned with mercury-free mining) was already recognised by those I had met at Fairtrade gold project workshops, in 2014 and 2015.

The journey moved into its next phase on my return to Migori in 2015, when I dwelled more on analytical, rather than descriptive research. Now, I sought the miners' personal views of how they saw the development of their livelihoods, both the opinions of miners who were not part of MICA's executive committee and continuing with those who were. At this time, the economic development of ASM was the thrust of my research, believing it was the key to wellbeing.

All the time I kept a close eye on the use of mercury, then in 2016, the CRED Foundation paid for a GoldKacha and for me to fly to Uganda to commission it with SAMA. Then I travelled on to Kenya and interviewed members of Micodepro, a second ASMO in Migori County. CRED again paid for more mercury-free processing equipment and for me to travel to Uganda in 2017 to test and commission a possible system, based on available technology.

Nevertheless, I sensed there was a missing dimension to my research, that of how the miners see the hand of God in their daily livelihoods. So while testing equipment in 2017, the concurrent field work sessions directly sought this information. By then my reputation as a Christian enabled the informants to trust me with their theological perspectives, as will be shown in Chapter Four.

However, I could not choose between the three strands of research that I had been pursuing as a thesis, until one afternoon in April 2018 when the concept of mineral resource justice emerged, so quickly that I regard it as an epiphany. However, from that day I could draw on all the research (primary and secondary) as three dimensions of justice, and was able to start composing this thesis.

The reason for choosing the mining sites for research was their link to Greg Valerio, and through him to the CRED Foundation or Fairtrade Gold (the East African initiative by the UK based Fairtrade Foundation); with the exception of Zimbabwe, which was based on my personal experience. Further details of the research journey follow in 3.2 and in Appendix Two.

The field work was necessary to elicit both the miners' contribution to knowledge within the academy and to guide any future development within their situations. It is important to note Gavin Hilson's concern: '...the burning question remains: how can conditions improve in this industry if underlying socioeconomic issues are not properly understood?' (2006a:5). The understanding used in this thesis arose from both my roles; firstly, participating as an agent of development for Side A, primarily with regards to developing mercury-free processes. Secondly, as a researcher, enquiring into the ordinary livelihood theologies, ethics and practices of Christian artisanal gold miners in East Africa e.g. discovering their perspectives on the four entities in the situation (God, gold, community, and surrounding creation). The field work is therefore to be seen as gaining some understanding through qualitative research, which is to be applied in the writing of the thesis and towards improving conditions in the sector; with both purposes being integral to the future promotion of shalom in the situation.

Yet, the thesis seeks to do more than describe these issues but to research the underlying values and norms that affect both the impacts discovered and their possible mitigation. In colloquial English, it researches both the 'is' and the 'ought' within the

existing situation. Values infuse the whole discussion, as has partly been shown in the preceding literature review, and those of the relevant actors are accessed in the field through research, using the methods outlined in the following sections.

The first section summarises Swinton and Mowat's model of Practical Theology and Qualitative Research (2006; 2016), which is the method chosen, as the concern of the research is transforming the situation through more faithful praxes.¹

The second section, using the model, discusses the investigation of livelihoods in the East African situation through the practices, ethics and theologies of Christian miners, noting that my actual fieldwork practices and some findings are recorded in Appendix Two. This section notes the cautions, advice and guidance in the research literature which particularly inform the fieldwork. The subsections elaborate on specific theoretical help for researching the ordinary theological views of Christian miners through investigating participatory, emancipatory, sensitive, vulnerable, and well-being approaches to interviewing informants.

The third section moves to the methodologies of analysis and evaluation of the findings; these allow social, economic and environmental themes to be established which are then evaluated in the following three thematic chapters.

Swinton and Mowat note their practical theology model is 'deeply embedded in the hermeneutical/ interpretative paradigm' (2016:72). During the course of my scholastic learning, I inquired into theories behind this paradigm,² and the fourth section investigates philosophical hermeneutics as foundational to their methodology.

¹ Here 'praxis means reflective involvement, action followed by an evaluative stance that is based on values and is driven by a vision' (Jurgens Hendriks 2004:219).

² 'Basically, hermeneutical means the study of the methodological principles of interpretation' (Jurgens Hendriks 2004:13fn.1)

3.1 Practical Theology within Qualitative Research

The approach championed by John Swinton and Harriet Mowat as Practical Theology and Qualitative Research (2006; 2016) (PT & QR), noted in the Introduction, serves as the method for enquiry into the research question. My interest is ethnographic research into church-going gold miners' practices and perspectives on theology and development, as a contribution both to the promotion of shalom in the community and to ASM development theory. Swinton and Mowat note that 'Practical Theology is a fundamentally missiological discipline' whose aim is 'not simply to understand the world but also to change it' (2016:27). Their model proposes a way of engaging the actor-agents of development in the field (Long & Long 1992; Long & Villarreal 1993) and their method thus 'involves consciousness raising' via a process of exploring the world 'through a theological lens' (2016:256). Swinton and Mowat explain:

Practical Theology seeks to explore the complex theological and practical dynamics of particular situations in order to enable the development of a transformative and illuminating understanding of what is going on within these situations (2016:xi).

They claim that 'practical theology can utilise qualitative research in a way that retains the integrity of both disciplines' (2016:260) through a four stage process and these are shown in Figure One (where page numbers refer to their first edition):

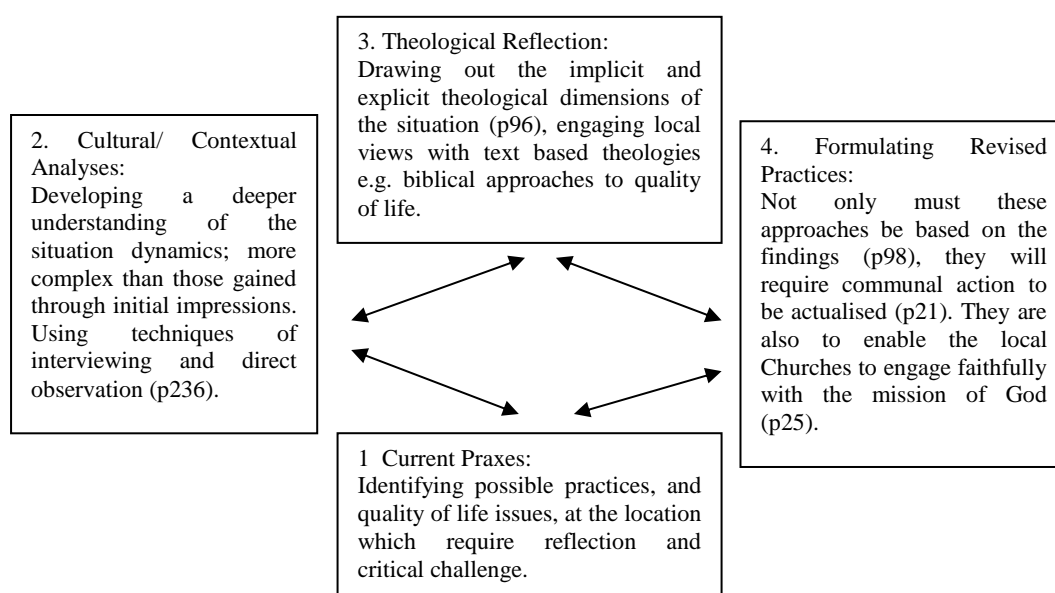


Figure One: Four Stages of the Practical Theology Model

These stages are summarised by Swinton and Mowat:

The ongoing hermeneutical task of the practical theologian will relate to the effective “reading” of particular situations in order that the forms of practice carried out within them can be understood and reflected on critically in the light of scripture and tradition with a view to enabling faithful practice (2016:12).

The first stage of their model explores the nature of the situation and articulates what appears to be going on. In this thesis, their first stage (describing current practices by the miners which require reflection) has been placed in Appendix One with supplementary descriptions placed appropriately into the thematic chapters that follow.

The second stage examines sources appropriate for gaining new knowledge about the complex situational dynamics. My use of this stage includes analyses by the parties involved: the miners themselves, those who are intervening in the quest for fair trade, and the ASM academic research community. Their contributions make up the initial sections of the following chapters.

Thirdly, the model reflects on the implicit and explicit theological dimensions of the information gained, i.e. ‘theological reflection’ searches more formally for theological significance in the data worked with, in order to develop theological dimensions that complement and challenge one another. Here the search is for authentic revelation in a spirit of critical faithfulness and chastened optimism (2016:91–2). In the second sections of the following thematic chapters, these theological approaches are supplemented by relevant theoretical approaches and by relevant global findings.

The previous chapter introduced dialogue partners from the literature for Pattison’s ‘mutual critical conversation’ (Pattison 1989), which Swinton and Mowat claim is ‘between the Christian tradition, the social sciences and the particular situation that is being addressed’ (2016:76). The literature reviewed theologians representing the Christian tradition and various academic researchers and theoreticians representing the social sciences, i.e. text-based conversation partners who would see the ends and means of justice in the situation. Firstly, how does the academic research community

understand artisanal gold mining as an economic livelihood practice and what shortcomings in the situation are they criticising? Secondly, what do EFT organisations (and other similar industry watchdogs) expect in terms of responsible mining, intervening through the standards they have set? Thirdly, what can be brought from theoreticians, indirectly or directly concerned for resource justice in the mineral extraction industry? Fourthly, how might theologians contribute to the conversation regarding ethics, justice and the character of the Christian God? In the next three chapters, more findings from these literature-based partners will be brought to the discussions; and the arguments of the thesis arise from interactions between such discussants and issues of justice observed in the East African situation.

The phrase ‘critical conversations’ is preferred when these perspectives are brought together, because critical is taken here in the affirmative sense, in that it ‘restores wholeness by rendering visible those dimensions which have been left out, ignored or not acknowledged in the status quo’ (Nederveen Pieterse 2001:131). Overcoming injustices in the situation requires critical dialogue between those practically involved and the above sources of wisdom, including theological sources.

Another requisite for this thesis is that ‘The theological reflection that is Practical Theology also embraces the practices of the world’ (2016:8) and further, ‘The aim of Practical Theology is to enable personal and communal *phronesis*: a form of practical wisdom which combines theory and practice in the praxis of individuals and communities’ (2016:25). Their hopes for practical wisdom: ‘This *phronesis* does not aim for knowledge for its own sake, but for an embodied, practical knowledge that will enable a particular form of God-oriented lifestyle’ (2016:25) coincide with my own. This, as will be shown in the thematic chapters which follow, is also the quest of the informants. Finally, the pursuit of practical wisdom to overcome injustices in the

situation requires critical dialogue between those practically involved and the sources of wisdom, including theological sources.

The fourth and final stage expects formulation of new faithful practices to transform the situation (2016:94–8). Some efforts towards the practical implementation of any research findings as per their Stage Four have been initiated and are discussed in the fourth sections of the next three chapters. This study of what is going on in the present situation will contribute to the future quest for ‘movement towards faithful change’ (2016:24), as noted in Chapter Seven.

The research, by a reflective³ practitioner (Schön 1983; Johns 2004), did not only reflect⁴ upon the practices of artisanal miners but also upon my practices in researching artisanal gold mining. During my research process I have often paused ‘in order to make sense and reframe the situation’ (Johns 2004:2). Practical theologies should allow researchers ‘to think more clearly ...and ...to practice more faithfully in terms of both of their research and of their personal spiritual journey’ (Swinton & Mowat 2016:260) and such approaches were recorded in my personal diaries, research journals and thesis notes kept throughout the doctoral study period.

In summary, the research method follows the four stages of the basic model of practical theological reflection (Swinton & Mowat 2016:90), which has been the method used since registration, albeit the stages have subsequently been nuanced for this thesis. Some of the strengths of the adapted model of practical theology outlined in this chapter are that it holds Christian theology and social sciences together and will correlate practice with theory. It allows for the communication of their praxes by Christian artisanal miners and for them to explain the engagement between their

³ ‘First of all, as a hermeneutical task, understanding includes a reflective dimension from the very beginning’ (Gadamer 1976:45).

⁴ ‘Schön ...distinguished reflection-*on-action* with reflection-*in-action* as a way of thinking about a situation whilst engaged within it, in order to reframe and solve some breakdown in the smooth running of experience’ (Johns 2004:1). This is true as I am simultaneously in two experiences, that of mining (reflecting on) and research (reflecting in).

ordinary theological views and the vicinal culture and community behaviour. It facilitates reflexivity on multiple levels by the researcher upon the present situation in order to contribute to ASM development theory.

The next section (3.2) explains the suitable ethical and practical guidance from the ethnographic literature for my approach to fieldwork in the situation, and 3.3 explains how the model has been applied in a nuanced way to provide an evaluative framework for the thesis.

3.2 Researching Livelihoods in the Situation

This section investigates the background into researching the ordinary theologies, ethics and practices in the livelihood of Christian artisanal gold miners in East Africa. As well as observation (both on surface and underground), three sets of open-ended discussions were held with miners individually or in focus groups. The first discussions investigated artisanal gold mining at a practical level in the empirical world; the miners' understanding of their livelihood as the first set of issues, chronicled in Appendix One. The second set of issues for primary research concerned the interventions of fair trade agents towards development in the sector and the ethics of the miners in response. The third set of field research conversations investigated the theologies of the miners in respect of the role of the Christian God in their daily livelihoods. These topics for fieldwork interviews can be summarised into three simple, open-ended questions:

1. How do you describe your work of artisanal gold mining in East Africa (livelihood practices)?
2. How do you think it can be made better (development ethics)?
3. How do you see God in your day to day work as a miner (ordinary theologies)?

Yet none of the sets of issues researched are independent of the others and all contribute to both to ASM development theory and to the future promotion of shalom in East Africa. These topics were researched in the field through different approaches at different times and in different places between 2011 and 2017. Fieldwork regarding practices and development ethics was mostly done in Kenya; practices and ordinary theologies in Uganda; and the third set relating to the use of mercury undertaken in both of these countries as well as Zimbabwe and Tanzania. The field research interviews sought the self-understanding of their gold mining livelihoods by Christian artisanal

miners through their theological and ethical beliefs⁵ as initiating answers for the research question. All fieldwork interviews, bar one, were conducted in English and where (for authenticity) there are quirks used by informants these are not corrected e.g. ‘gregorious’ for gregarious. The one exception was translated as the interview progressed, allowing me to write down the English translation sentence by sentence.

How the findings from all these fieldwork trips inform social, economic and environmental justice under God is the subject of the next four thematic chapters. In these chapters, appropriate Western text-based theories and theologies of justice as they may apply to the artisanal gold mining sector will be brought to critically converse with findings from the people directly involved in the sector. This in turn requires the

active involvement of research subjects (which) makes ethical issues a particular concern in participatory, more than other forms of research. (This) means the key issue in participatory research is not so much the techniques used as the way in which the research is conducted and the relationships established between researchers and research participants. (White & Pettit 2007:251)

As explained in the Introduction the fieldwork would need active relationships to be established in ways conducive to participatory research, details of which follow.

Initially, the research set out to investigate the development of good and responsible artisanal gold mining, with me at the interface, collaborating with both artisanal gold miners (Side B) and various EFT development agencies (Side A). Within qualitative research, the ethnographic approach taken is generally known as participant observation and the next subsections discuss the cautions, advice and guidance in the research literature which particularly informed my fieldwork. They elaborate specific theoretical help for researching the ordinary livelihood theologies and ethical views of Christian miners in the field, through participatory, emancipatory, sensitive, vulnerable and well-being approaches.

⁵ Beliefs, as used here, arise when propositions are held to be true and are ‘controlled by rational and irrational factors’ (Blackburn 1994a:40).

3.2.1 Researching livelihood practices

During the two-week scoping visit to western Kenya with Greg Valerio (documented in Appendix Two), I was surprised to find the geology, mining and processing of gold were quite similar to my experiences from Zimbabwe. According to I.D. Sanders:

The Goldfields area of Western Kenya ... shows striking geological resemblances to parts of the continental shields of ... Southern Rhodesia,⁶ and evidently had a similar mode of evolution ... recognition of this correlation is important since the ... Southern Rhodesian greenstone belts constitute similar metallogenic provinces which have been exploited for gold since the late nineteenth century ... [These greenstone] systems were only recognized as gold-bearing formation in the early thirties of the [twentieth] century, since then however they have yielded almost all the gold produced in the territory. (1964:4–5)

Like Zimbabwe, the rocks of the gold-bearing formations are narrow quartz reefs, inclined almost vertically and are easily recognisable both on surface and underground. They also contain minute particles of free gold that are liberated through simple crushing and milling, and are amenable to mercury processing. Nevertheless, I realised that I needed far longer exposure to the practices of artisanal gold mining in order to understand it as a livelihood, unlike my experience in the medium to large scale sectors of gold mining. This could only be accomplished through a lengthy stay in the gold fields of Migori with access to mine sites belonging to the members of MICA. The five members of MICA most involved in the fieldwork were Messrs. (George) Okoth, (John) Asembo, (George) Odhiambo, (Julius) Opiyo and (Duncan) Onyango who are all Luo, middle aged men with families. The ASMO executive graciously agreed to be the site for my future fieldwork and I subsequently received a ‘to whom it may concern’ letter approving my doctoral research with them, if required for use with permits.

As per Appendix Two Section One, I was able to complete the Golden Vein questionnaire in interviews with Opiyo and Odhiambo, and partially with Asembo, prior to my departure from Migori. These findings indicated that the state of MICA at the time fell short of the ARM requirements, and that as an ASMO, it needed attention before being certified for fair trading in gold.

⁶ Zimbabwe was formerly known as Southern Rhodesia.

For the next three years, preparations for further fieldwork in East Africa were focussed on fair trade, development, ethics and wellbeing within ethnographic research. Before the second visit I needed some very basic research tools and the following practical textbooks on research methods were consulted before re-entering the field. Resources included (Marshall & Rossman 1995; Dawson 2002; Rossman & Rallis 2003; Jurgens Hendriks 2004; Walshaw 2012; Thomas 2013). These were followed by more specific resources to do with field researching (DFID 1999; Harrison 2006; Pitts & Smith 2007; Cameron et al. 2010; Morris 2015). Further practical help was sought for interviewing (Douglas 1985; Willis 2006; Kvale & Brinkmann 2009; Morris 2015) and focus groups (Lloyd-Evans 2006). Finally, the issue of triangulation was researched (Brewer & Hunter 2006; Blaxter et al. 2010:205). These methods of ethnographic research were to prove useful for individual and focus group interviews supplemented by personal observations whether video or audio taped or written into journals.

The second fieldwork visit lasting ten weeks in 2014 was focussed on understanding the sector, starting with the practices of artisanal miners within their situation in order to familiarise myself with their livelihoods. Each day in the field was reviewed in a written journal especially noting activities that needed further clarity, i.e. these weeks were mostly given over to my education in artisanal gold mining practices in Migori County. Secondly, time was spent researching the developmental role of the Migori County Artisanal Mining Co-operative (MICA) through interviewing their executive members either individually or in focus groups. This latter fieldwork is discussed in the next subsection: Researching Ethics. The descriptions were also drawn from miners and others not connected to MICA, interviewed during the one month's visit in 2015 and during a week in 2016. Further findings from the first set of fieldwork in Kenya are elaborated in Chapter Five discussing livelihood and development ethics.

Importantly, with reference to researching artisanal gold mining, Tina Mwasha one of the project partners used by Fairtrade Foundation in Tanzania commented that:

University researchers will go there to get information, the Government, United Nations, someone will go there ... the first time I got to the site they told me “if you have come as one of the researchers please can you back, where you came from? We are not going to give you information to make your thesis and make money. You have to show us that you are one of us, you have to show us your passion” ... [So] even us, we have to change from our professional whatever we are, to being one of them ... to walk along with them. To me, I think there isn't a better way. (Mwasha 2015)

In order go from a researcher treated with indifference to being seen as one of the miners, I adopted an innovative, dynamic approach, moving from observer to participant in four phases.⁷ In East Africa, I was clearly an outsider whose ‘race, nationality, gender, and class (was) likely to generate certain assumptions on the part of informants’ (Barrett & Cason 2010:110). Yet we needed to gain mutual confidence over time that allowed for movement from being the obvious outsider into participatory research (Cornwall & Jewkes 1995; Beazley & Ennew 2006; DeWalt & DeWalt 2011).

The First Phase sees the arrival of ‘the stranger’, i.e. neither local nor an unobserved observer who, even though present, can be ignored. Even as a fellow miner, I had a sense that the research process ‘will be weakened or made more difficult if the first steps are not executed carefully’ (Bouma & Ling 2004:8). As a stranger, I entered the research without speech, deaf and dumb to their language, listening and watching as an observer, trying to identify spaces for future participation. During my induction in this ‘stranger’ phase, I mostly kept silent, watching the activities of underground mining and surface gold processing, simply asking questions of clarity to those who were assigned to escort me.

The movement between the phases relies upon tactfulness and is dependent upon interpreting signals between the community being researched and the researcher. The practice of tact⁸ as a psychological or instinctive sense is without definable rules or

⁷ As suggested by Brainerd Prince. Personal Communication. 7 October 2014

⁸ Tact required reflexively interpreting both one-self through an interior conversation and the cues of the researched, another aspect of research warranted by philosophical hermeneutics.

methods (Grondin 1994:108) and relies on social cues. I was pleased during the fieldwork when the miners began teasing me, a sign I had reached Phase Two. I was teased about my sweating whilst being underground with them, an act of commitment resulting in ‘things that are common to all of us...heat, stench, embarrassment’ (Feldman et al. 2003:37). This began the phase of the ‘fool’ asking stupid questions as a new boy on the block, the idiot amongst us, but an idiot seeking to learn.

Phase Three was that of the ‘student’ asking questions about the reasons for what was going on, seeking explanations for observed behaviours and activities. It was then that I learned of the illegal use of explosives and the difficulties involved in this practice becoming legitimate. Now, I moved to the conversation phase, discussing what I had seen informally with leaders, perhaps taking notes or making sketches in my writing pad. I also began ‘unstructured interviews’, using a digital recorder and a note pad, with the same leaders and representative miners.

The Fourth Phase the ‘dialogue partner’ allows discussion for co-constructing (or co-participating), trusted with dialogue of why and how, but still there to learn how things may be improved. I was still trying to gain expertise in their ‘language’ even if not spoken in the dialect, but now deemed to be trustworthy spokesman, or a representative of the researched. Having reached the fourth phase, discussion became an important medium for my research because ‘it is *in and through* our talk and interactions that we experience, produce and maintain social life’ (Seale 2004:396) to which I add our Christian life. Subsequent ‘analysis requires researchers to consider how elements of our social life - our talk, tasks and identities - are locally accomplished in and through talk and interaction’ (Seale 2004:384), which points to searchable elements within the talk. When the research was directed at developing good and responsible mining, knowledge was clearly weighted towards the researcher as a retired mining engineer.

When it shifted towards listening to their experiences, opinions and understanding of their livelihoods from theological and ethical perspectives the confidence to share their inner knowledge was restored to the miners. The informants deepened and changed the scope of the research from (in colloquial terms) telling me what *I thought* I wanted to hear about mining to telling me what *they wanted* me to hear about their lives as Christians in mining.

The goal during fieldwork was to reach the participant phase where ‘the researcher’s function is to serve as a resource to those being studied’ (Babbie 2013:341) and in the cross-cultural situation of this research, progress was dependent upon tactfulness. I remained committed to the objective of being a reflective dialogue partner realizing there was no ‘strict set of *rules*’ (Aldridge 2015:150) to follow. The need for reflexivity is also stressed by Preston who cautions that the ‘exchanges between intervenors and recipient groups are very complex indeed’ and that ‘any reflexive criticism entails clarity in respect of the expectations of the development theorists’ (1996:303). I rue those events when tactlessness on my part affected participatory dialogue, fortunately occasional and after which the restoring of relationships was never withheld when I apologised.

This subsection has outlined a novel, dynamic approach for the researcher moving from observer to participant based on tactful interactions with the researched. This innovative approach contrasts with, for example, Russell Bernard’s static choice of being a complete observer, participant observer, or complete participant (2006:347). Another example is where the central position is further nuanced into a partially participating observer, a minimally participating observer or a non-participating observer (Bryman 2016:435–7).⁹ While acknowledging that the ‘anthropologist cannot

⁹ Jo Aldridge mentions two other typologies, firstly Biggs’ ‘four modes of participation (drawn from agricultural research) contractual, consultative, collaborative and collegiate participation’ (2015:20) but again these are treated statically. Secondly she mentions Hart’s Ladder of Participation model where the

dictate his or her terms of entry’ (Okely 2012:55) yet ‘hanging out builds trust or rapport’ (Bernard 2006:368), none of the texts consulted consider the phased approach from observer, whether direct or unobtrusive (Bernard 2006:413–444), to participant in order to gain this rapport.

The third set of fieldwork, investigating mercury free equipment was more technical, falling within my prior skills and experience. Briefly, the trip to Zimbabwe during the period of research was for testing the gold ore gravity concentrator commercially known as the GoldKacha (GK)¹⁰ and marketed as appropriate for artisanal and small-scale mining by its manufacturers Appropriate Process Technologies (APT)¹¹ who are based in Harare and Johannesburg. A report, with photographs, of this visit was sent to Valerio and the CRED Foundation, and is attached as Appendix Two: Section Two. This resulted in the purchase of the GK concentrator, a smelter and a manufactured sluice for the Syanyonja Artisanal Mining Association (SAMA), an ASMO in Uganda. The equipment is believed to be integral in eliminating the use of mercury and was introduced by me to SAMA in 2016. The findings from this set of fieldwork research are discussed in Chapter Six, investigating environmental justice.

The thesis is limited to artisanal gold mining in western Kenya, and refrains from research into precious stones (such diamonds, emeralds or rubies) and base metals (such as chrome in Zimbabwe or coltan in the Congo). It will not research conflicts (or their resolution) between this sector and other scales of mining activities (medium, large and very large) and there is no research into ASM sites where they are already labelled ‘illegal’ (such as South Africa).

researched (in this case children) move through 7 stages from manipulation to self-directed research (2015:21). Michael Pratt notes how researchers can move from ‘surface’ to ‘deep’ becoming full participants-emotionally, cognitively and behaviourally- in the community (Pratt 1992) as quoted in (Feldman et al. 2003:140). Nothing similar to Prince’s suggested four phase dynamic approach for the researcher as participant observer has been found so far.

¹⁰ GoldKacha is the brand name of a portable electric centrifugal gravity concentrator. More details on this equipment follow in the next chapters and Appendix Two.

¹¹<https://www.aptprocessing.com/modular-mining-equipment/gravity-concentration/gold-concentrator-goldkacha> accessed January 2019

3.2.2 Researching development ethics

Resulting from the scoping visit, I was unsure of the ethical health of MICA, within the context of the Side A and Side B relationship. High Street jewelers have, in effect, given their proxies to EFT organisations to certify the producers of the raw materials as reaching certain standards of ethical production. In turn these EFT organisations seek to give responsibility to producers, collaborating in the form of ASMOs, to ensure such ethical production. I wanted to research MICA's capacity to further these aims, during my second and subsequent visits.

My investigation into research methods regarding the role of MICA (prior to the second visit) started with social qualitative research e.g. (Marshall & Rossman 1995; Mason 1996; Oliver 1997; Dawson 2002; O'Leary 2017). The scope narrowed to researching development (Long & Long 1992; Long & Villarreal 1993; Preston 1996; Desai & Potter 2006; Scheyvens 2014) i.e. the research approach chosen 'is applied in quite a particular context: that of development studies' (Preston 1996:303). He continues:

The type of work expounded has clear characteristics. It is interpretive; that is, it is concerned to spell out the detail of the processes whereby ordinary patterns of life are made and remade. It is dialogic; that is, the conduct of fieldwork exercises and their subsequent formal presentation takes place via conversations (with informants and colleagues). The fieldwork exercise is a social process itself and the formal report, the contribution to scholarship, is similarly a specific social process and the final text is thus a complex cultural construct. In orientation the approach may be said to be hermeneutic-critical: it is elucidatory in intention, aiming in a reflexive fashion to spell out the ways in which the agents involved make sense of their respective worlds and the various exchanges between these worlds. (Preston 1996:302)

Preston's 'hermeneutic-critical' approach is more nuanced than standard ethnographic or anthropological methods (Wolcott 1995; Bryman 2001; Bernard 2006; Okely 2012). Approaches such as these 'attempt to study social life as it unfolds in the practices of day-to-day life' (van Donge 2006:180) in order to get 'an understanding of behaviour from inside a society instead of imposing a logic of cause and effect on social situations' (2006:186). The research sought both nuanced methods and a methodology that would limit the perennial problem of gathering evidence in the Global South in

order to contribute to theories formulated by and for the Global West (Grillo & Stirrat 1997; McGillivray 2007). Further, the research in the context of development was to be conducted in a cross-cultural post-colonial situation with rural people groups (Tuhiwai Smith 1999; Willis & Saunders 2007; Pitts & Smith 2007) in East Africa.

The fieldwork for the second visit moved from originally planning to directly examine MICA's ethical health as an ASMO fit to pursue development. I discovered during this visit that, in spite of my preparations, the concept of wellbeing of organisations could not be easily grasped by informants and my explanation of the question invariably directed answers by the first few respondents towards affirmation. Instead, informants were interviewed through open ended questions for their knowledge and opinions about the history, present state and future of MICA as an organization.

I also attended two workshops organized by the Foundation, firstly in Tanzania in 2014 and secondly in Migori in 2015. I made copious hand written notes and audio recorded certain sessions during these workshops, treating them as focus groups to hear the ethical perspectives of Fairtrade International. I also travelled with their representatives (Valerio); local partner consultants (EWAD); and employees (Gonzaga Mungai); where again notes were written or talks were recorded. These ethical findings from numerous primary sources form the basis of Chapter Five which discusses economic justice.

3.2.3 Researching ordinary theologies

Thirdly, the research project is concerned with theology because it 'always addresses specific human dilemmas; and its continuing incarnation in the midst of different circumstances will of itself contribute to the continuing unfolding of revelation' (Graham et al. 2005:227). For many 'a spiritual life and religious observance are woven in with other aspects of wellbeing' (Narayan 2000:38). Sarah White and Jethro Pettit

maintain that the ‘key promise of participatory methodologies is that they are “experience-near” ...they are able to reflect more closely the knowledge and world view of people themselves’ (2007:243). Perhaps its most obvious contribution, they continue ‘is in its capacity to draw out culture, location and social group specific understandings of the dimensions of well-being’ (White & Pettit 2007:248). In order to draw out these understandings from a theological perspective, I chose the category of ordinary theology.

Ordinary theology (Astley 2002; Astley 2013) was the category used for the articulations by Christian artisanal miners, in the context of their current Ugandan situation. Research into ordinary theologies requires ‘theological listening’ which allows people to express in their own words their ‘feelings, relationships and actions, and especially their values, ideas, beliefs and understanding’ and takes them seriously. Such research occurs within ‘normal pastoral conversations’ with observations that are ‘alert, empathetic and intelligent’ coupled with ‘necessary critical self-reflection’ on the part of the enquirer (Astley 2013:4). Beside yet more links to hermeneutics through conversation, listening, and reflexivity, Astley points out the reality of theologies that are not formally taught but which can be espoused when sought. These may give rise to operant theologies, those which direct behaviours practised by believers (Cameron et al. 2010:53–6). The research project is ultimately concerned with ‘theology-in-action’ which ‘places primacy on *orthopraxis* (right action) rather than on *orthodoxy* (right belief) ...and “talk about God” cannot take place independent of a commitment to a struggle for human emancipation’ (Graham et al. 2005:170). The emancipation towards justice, remains primarily on right action, but is dependent on understanding the right beliefs of God’s character and purposes. So before ‘doing theology’ (Schreier 1985; Reader 1994; Hinsdale et al. 1995; Green 2009) with the mining communities that would lead to justice in practise, I needed to research. That is to theologically listen to

what my informants wanted to tell me of their experiences of God (Pattison 1989; Killen & de Beer 1994:73) within their daily livelihoods. This follows Green's 'incarnational principle of engagement - that God works from within the situation itself and from those who are most intimately engaged within it' (Green 2009:110) and the field research set out to discover aspects of how God may be involved.

The approach to the field work in Uganda is described in Chapter Four, where the miners' expressed their perspectives on the role of God in their daily economic livelihoods, their dynamic view of the deposits of gold, and their worries over community behaviour. The resulting findings became the core of understanding the dimension of social justice appropriate for their situation.

All the relevant field work findings used in the thesis are clustered into two categories. Firstly observations and descriptions of the miners' practices in the situations which describe what is going on at present. These findings are documented in Appendix One. Secondly the miners express their concerns for what should be going on through their ordinary theologies and ethics; their beliefs, hopes and expectations for what the situation ought to be.

In the next section, a framework is established for structuring a critical conversation to analyse the situations observed and described. The dialogue partners in these critical conversations include the miners in their second role, discussing the situations observed. The conversations are set up to be critical, to discuss what ought to be going on, from the perspectives of various authorities, some directly involved and others whose expertise (as shown in the preceding chapter) can be brought into the discussions.

3.3 Processing and Evaluating the Fieldwork

The interviews eliciting personal information were recorded and then transcribed manually with timing inserted approximately every minute in order to facilitate future playback of specific comments. The transcriptions are limited to the vocal record of the participants (Kowal & O'Connell 2014:66) and include extracts of my own questions and comments to further understanding of the responses within group conversations or dialogue with a single informant.¹²

3.3.1 Establishing the themes

The analysis of these interviews and field observations initially follows the process outlined in grounded theory of coding¹³ which was mostly done using the NVivo software programme¹⁴ whereas the field observations were manually analyzed. The *vignette* used in the Introduction was emblematic for this study (Miles & Huberman 1994:81) in its portrayal of an everyday gold sale which took twenty minutes in the village of Masara. It was written on the same day during field research and typifies the issues relating to gold sales and to the uncontrolled vapourisation of mercury which are important to the thesis.

Although the analyses drew on concepts from grounded theory (Glaser & Strauss 2009) they deviated from this approach. Further interviews in which questions were informed by the emerging analysis were not conducted which means there was no theoretical sampling. Secondly, although line-by-line coding proceeded through the interviews, it stopped before I reached theoretical saturation (Engler 2014:267–8), i.e. before all the possible new concepts and categories could be drawn. Scholarship on

¹² Sadly the written commentary cannot convey the background soundtrack of Africa, e.g. dogs barking, roosters crowing, crushers turning, friendly interruptions and so on, an extra dimension of noise that causes immediate reliving of the interviews when listened to, much less so when reread.

¹³ 'Coding in qualitative research, in its simplest sense, is a way of 'tagging' text with codes, of indexing it, in order to facilitate later retrieval' (Bazeley & Jackson 2013:70).

¹⁴ The multiple uses of NVivo were restricted to coding of text based data and subsequent analysis.

grounded theory strongly advises researchers to immerse themselves in the data gathered during fieldwork. This allows themes and subthemes, concepts and codes to emerge, solely it would seem, from the field data (Bazeley & Jackson 2013; Beazley & Ennew 2006; Strauss & Corbin 1998; Glaser & Strauss 2009; John 2012). In contrast, Sophie Laws notes four sources for categories or themes during research analysis. These are ‘Your original research questions, aims and objectives. The questions you asked respondents. The data itself – the way in which respondents think about things. Your theories about what is going on’ (Laws 2003:396). Data refers to ‘something known ... and made the basis of reasoning’ (Murray et al. 1933a) and Clifford Geertz observes ‘What we call our data are really our own constructions of other people’s constructions of what they and their compatriots are up to’ (1993:9). In this thesis, where the sources are oral interviews then informants give information, that is, data that the respondents are already reasoning with or interpreting. For example, the literature investigation into artisanal and small scale mining provided the first order of concepts behind the practices of mining, that of livelihoods (Smillie 2006). The field research included gathering the opinions, understanding, explanations and experiences of miners in the course of their working life, as well as data through personal observation.

The analysis of oral responses and field observations followed the method of Anselm Strauss and Juliet Corbin, categorising the information through open coding (1998:113). This analysis sorted the information into categories, reducing its volume, and further reflective study, using all the sources, resulted in the three themes that concern this thesis. However, the arguments for justice did not occur solely from ‘... "mining" the data, digging beneath the surface to discover the hidden treasures contained within data’ (Strauss & Corbin 1998:68). Instead, they came through reflection on Laws’ first three sources and the secondary literature, all of which contributed to her fourth source (Laws 2003:396), my theorizing about what is going on.

3.3.2 Evaluating the themes

Rosaline Barbour notes the importance of the research analysis in encompassing the literature review and the contextualization of the study as keys to developing ‘the transferability of the resulting model or recommendations for other related practice areas. Consideration of the potential for “theoretical generalizability” may relate to the usefulness of concepts and frameworks for a specific field of study (Barbour 2014:507–8). There were inescapable difficulties with trying to find a single analytical method to provide theoretical generalizability for the academy, let alone trying ‘to deal with mess, confusion and relative disorder’ (Law 2004:2) of the situation. Instead, a combination of Swinton and Mowat’s model and the reflexive methodology approach of Alvesson and Sköldberg (2009), allowed for a sufficient approach to evaluating the three themes.

Two perspectives expand Swinton’s and Mowat’s first stage, understanding the current situation. The first perspective is drawn from the various standards, guidelines and criteria issued by international EFT agencies prescribing measures of responsible mining to be attained by artisanal mining organisations. These policies intend to mitigate the economic, environmental, social and governance impacts of mining (UNEP 2012; Fairtrade Foundation 2013; ARM 2014; Impact Facility 2018). The second draws on observed mining, processing and gold sales practices, which were recorded in field notebooks and daily diaries (some on video camera); while verbal explanations of these practices were audio recorded. The arguments presented are based on, and attempt to remain true to the original information shared by the miners about their livelihood.

Following the second stage of the practical theology model, the third perspective is that of self-evaluation i.e. allowing the Christian informants to express their ordinary theologies, as per Jeff Astley (2002), and ethics through semi-structured interviews and focus groups. This evidence from the mining community was transcribed and open coded to give the first level of conceptual ordering (Strauss & Corbin 1998:101–21).

The fourth perspective (still within Stage Two), comes from commentaries and concerns raised by research studies into the same situation around the world that call for interventions by society, Government or institutions to promote responsible mining. Their criticisms, when seen affirmatively, also usefully analyse and evaluate the situation as part of the ASM comity.¹⁵ Also, global data regarding artisanal gold mining is brought to supplement analyses of the situations observed or discussed, with calls for mitigating the negative social, economic or environmental impacts. The literature review showed that behind these calls for improvement in artisanal mining practices lie concepts in development theory from various theorists who are for or against development e.g. (Freire 1970; Schuurman 1993; Toye 1993; Cowen & Shenton 1996; Gasper 2004). This level of evaluation also considers perspectives on justice drawn from the publications of established scholars that can be applied to the situation under investigation e.g. (Aristotle 1975; Sachs & Santarius 2007b).

The third section of each thematic chapter follows Swinton and Mowat's third stage, consisting of theological reflection (2016:91–2), and includes two more perspectives. Theological concepts of justice and shalom are brought to bear on the project as exemplified by (Duchrow & Liedke 1989; Cramp 1995; Blomberg 1999; Hartropp 2007). The thesis will argue that the forms of justice (social, economic, and environmental) identified in the situation are integral to the promotion of flourishing. Finally (the sixth perspective), with a desire for 'intelligent love' (Lebret 1965:198, 213) in promoting shalom, relevant Biblical characteristics and purposes of the Christian God are examined. Mostly drawn from the Old Testament, these Western text-based theologies further illuminate justice. These last two perspectives also make clear theological links back to the ordinary theologies of the mining communities in East Africa.

¹⁵ 'Comity: a loose widespread community' (Allen 2007a:251).

Finally, selective coding (Strauss & Corbin 1998:143–61) allows the re-conception of these three justices into mineral resource justice under God (Chapter Seven). Once again, it is not that this understanding emerged during analysis of the field information only, but through reflecting theoretically on the critical conversation between both primary and secondary information. Reflection ‘is a looking back and reviewing self’s development over time: the way insights have emerged and influenced future experience’ (Johns 2004:4).

The role of reflective practitioner creates tensions (Schön 1983:69), between theoretical and theological reflection, on the one hand, and the need for future practices to be based on the learning afforded by this research. The research persistently sought information from any source that could aid the processes of reflection (Alvesson & Skölberg 2009), some of which is used as evidence in the following arguments. An argument is a series of claims reasoned from, and substantiated by, evidence (Booth et al. 2003) and the entire edifice of argument, claims, reasons and findings used as evidence is continually reviewed and interpreted by the researcher (Pottier 1997; Desai & Potter 2006), in my case as reflective practitioner.

Regarding future practices, both practical theologies of mission and practical wisdom will be explored in Chapter Seven, bearing in mind that the implementation of faithful artisanal gold mining practices, ethics and creation care can only arise through collective learning in the post-doctoral future. Whether it is practical theology or practical wisdom which is required during the promotion of shalom in the East African situation, they will be framed within ‘the hermeneutical/ interpretative paradigm’ (Swinton & Mowat 2016:72), and the next section investigates the philosophy behind such reflective practices.

3.4 The Hermeneutical/ Interpretative Approach.

This section of the chapter investigates what lies behind Swinton and Mowat's paradigm (2016:72) and my approach to the fieldwork and the thesis composition.

Peter Preston's description of the 'hermeneutic-critical'¹⁶ method (1996:302) argued that it is 'interpretive; ...concerned to spell out the detail of the processes whereby ordinary patterns of life are made and remade' (1996:302). The use of interpretive or hermeneutic as used by Preston (or Swinton and Mowat) requires a deeper understanding. Within the broad scope of social research this is an 'interpretivist' approach (Miles & Huberman 1994:4; Walshaw 2012:62; Thomas 2013:108). In more detail:

Interpretive methods yield insight and understandings of behavior, explain actions from the participant's perspective, and do not dominate the participants. Examples include: open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, think aloud protocol and role-playing. These methods usually generate qualitative data. Analyses are the researchers' interpretations; consequently, researchers need to make their agenda and value- system explicit from the outset. (Scotland 2012:12)

The agenda of the thesis is the understanding of justice and the values it contains are taken from three sources. The first source is the ordinary theologies, ethics and practices of Christian artisanal gold miners in East Africa. Secondly, the theories and theologies of justice and development reviewed in Chapter Two. Thirdly, my own values as a white African, Christian mining engineer which will be expressed in the following chapters.

Tsenay Serequeberhan notes that hermeneutics 'derives from the name Hermes, the messenger-interpreter god of ancient *Hellas* ...(who) rendered and translated the messages of the gods' (1994:1). He claims that its 'basic direction and sensibility of thought (was) opened up by Martin Heidegger's *Being and Time* and further explored

¹⁶ With regard to 'critical' and 'interpretative' in this research 'the interpretive paradigm seeks to understand, and the critical paradigm seeks to emancipate. Each paradigm has its own ways of realizing its aims ...philosophical assumptions ... underpin each paradigm and ...these assumptions manifest themselves within methodology and methods' (Scotland 2012:14). Here, a paradigm is taken as 'a framework for ideas' (Allen 2007h:925) and in research it is composed of 'ontology, epistemology, methodology, and methods' (Scotland 2012:9).

and propounded by Hans-Georg Gadamer's *Truth and Method* – the two most important figures and documents of contemporary philosophical hermeneutics' (1994:1–2). Their philosophies, reacting against Comte's positivism in social research (Bernard 2006:22), supply the warrants for the information gathering method, subsequent analyses and final arguments of the thesis. 'Hermeneutic science, characterized by interpretive social science (including ethnography), aims to understand the world interpretively by deciphering meanings' (Thomas 1993:70) and the quest to decipher meanings¹⁷ is fundamental to this research. Nevertheless, 'despite its important contributions to a theory of understanding and interpretation, (philosophical hermeneutics) does not provide methods of interpretation in the narrower sense of data analysis in qualitative empirical research' (Wernet 2014:235) hence the necessity of the previous sections.

The hermeneutical-interpretive approach acknowledges the role of personal pre-suppositions. Martin Heidegger calls for the courage to question 'the truth of our own presuppositions and the realm of our own goals' (1977:116). This questioning is also called for by Gavin Flood who argues for a reflexivity¹⁸ that 'refers to the ability of a researcher ... to become aware of the contexts of research and presuppositions of the research programme' (1999:35). He adds that the research 'method moves ... towards a recognition of context and a recognition of agency – that the researcher is a social actor in a socially legitimated activity, as are the people or community whom are the object of research' (1999:38). Richard Bernstein is concerned that 'the hermeneutical task is to find the resources in our language and experience to enable us to understand... initially alien phenomena without imposing blind or distortive prejudices on them' (1983:141).

¹⁷ The investigation of meaning typical of Gadamer's concerns includes 'the investigation of communication and the relationship between words and ideas, and words and the world' (Blackburn 1994b:235).

¹⁸ 'Reflection means interpreting one's own interpretations, looking at one's own perspectives from other perspectives, and turning a self-critical eye onto one's own authority as interpreter and author' (Alvesson & Skölberg 2009:vii). In this thesis reflection and interpretation can be treated as synonymous occurring as a *verbum interius* the inner verbalization which 'strives to be externalised in spoken language' (Grondin 1994:xv) and what is then expressed must be 'self –sufficient and is to be judged on the basis of its own evidence' (1994:xiv).

Regarding these phenomena, ‘the meaning of the “things themselves” can only be grasped through ...forestructures that enable us to understand’ (1983:136-7). As a mining engineer and mining entrepreneur, I knew I was bringing certain foreknowledge to the research (albeit won in and for a different scale of the mining industry) and needed a method where this experience would be acceptable in research, finding it here in philosophical hermeneutics. Serequeberhan adds ‘It is this perpetual process of lived self-understanding, peculiar and internal to human existence as such, that philosophical hermeneutics consciously articulates and cultivates’ (1994:19). As a researcher, I am situated at the interface between Sides A and B, a white African Christian retired mining engineer, providing some expertise¹⁹ towards justice.

The hermeneutical-interpretive approach expects the interpreters to remain aware of their own ongoing *verbum interius* (Grondin 1994:xiv), which occurs within the personal horizon or constraints of cultural roots and beliefs (Gadamer 2013). This obligatory self-observation did not allow separation from or transcendence above the information gained from the miners and was integral to assembling the conversation partners to evaluate their livelihoods under God. Simon Blackburn believes that ‘outstanding elements of our everyday conceptual scheme include ... causal relations, other persons, meaning-bearing utterances of others, and so on’ (1994a:72) and his three examples are germane to my unwillingness to discard any of the six perspectives.

The hermeneutical-interpretive approach is to be forward looking: ‘Whereas the hermeneutics of suspicion²⁰ looks backward ...the hermeneutics of confidence is oriented in a forward direction, towards the world that presents us with meaning to be

¹⁹ ‘It is as well to recall the advice of Norman Long who noted that all development project work involves a long-drawn-out exchange between those who are providers, those who are recipients and those who would lay claim, however modestly, to relevant expertise’ (Preston 1996:313).

²⁰ ‘This is a phrase coined by Paul Ricoeur to characterize the interpretive strategy that distrusts immediate meaning. Along with Nietzsche, (who) traces it back to an unconscious will to power, as representatives of the hermeneutics of suspicion, Ricoeur names Freud, who reduces meaning to unconscious drives, and Marx, who links it to class interests’ (Grondin 1994:15).

interpreted' (Grondin 1994:15). This confidence in meaning would result from dialogue²¹ to reach an intersubjective²² interpretation. The worry over the validity of these interpretations is addressed by Flood who cautions that knowledge within the human realm is from a situational perspective; it is fallible, incomplete, language based, dialogical, embodied, social, unfinalizable and accountable (1999 passim). Yet 'from the absence of absolute truth it does not follow, however, that we have no truth' (1994:142), instead Grondin argues 'when we say we understand, we are laying claim to truth, and by truth we mean simply a meaningful account that corresponds to things' (1994:141). Through the *verbum interius*, the 'inner deliberation' that is 'going on behind the voice' ('the conversation which we never cease to be') we 'experience a capacity for truth within itself ... which has long ... promised, and been called, reason' (1994:143-4). Thus 'the truths we share and which we have good reason to affirm are neither arbitrary nor absolutely certain' (1994:142) and these qualifiers apply to the quest for understanding justice within the dynamic artisanal gold mining situation and its changing economic, environmental, social and governance milieux.

The methodological framework has linked philosophical hermeneutics, participant observer ethnography and critical research. These are apparently disparate approaches²³ which draw on 'principles from hermeneutic, ethnographic, and participatory research traditions' (Montreuil & Carneval 2018:1138). Thus 'hermeneutic ethnography gains from being bridged with a participatory research framework' a bridging 'inspired greatly by the work of Paulo Freire'²⁴ regarding social justice and 'questions of empowerment and agency' (2018:1138). 'Through a participatory hermeneutic ethnographic study, important ethical issues can be highlighted and examined'

²¹ In this thesis dialogue is taken as a 'conversation between two or more people exchanging ideas and opinions' (Allen 2007h:351).

²² Subjective is taken to mean 'reality as perceived by the observer rather than independent of the observer' (Allen 2007h:1281).

²³ David Singh. Personal Communication. 6 July 2018.

²⁴ Paulo Freire *Pedagogy of the Oppressed* (1970).

(2018:1142) although here important theological, ethical and practical issues are researched.

In conclusion, this background understanding of the practical theology model has given further insights into my own position as a researcher at the interface between the two sides. This section has noted that philosophical hermeneutics acknowledges terms such as reflexivity, constructiveness, dialogue and interpretation, as mentioned in Chapter Two and the sections above; these are terms concerned with the role of pre-suppositions on my part, as a researcher. The hermeneutical/ interpretative approach also pointed to the need for establishing relationships to enlist the active help of the research subjects in gaining confidence, not solely in knowledge for academic contribution, but in gaining wisdom towards more faithful practices in the situation.

Chapter Conclusion

This chapter has recorded the research behind the research, understanding the application of ethnography, within qualitative research, to the situation first observed during the 2011 scoping visit. A number of nuances to standard ethnographic techniques were then applied in subsequent fieldwork trips to research the practices, ethics and ordinary theologies of Christian artisanal gold miners in East Africa.

As a result of this thorough preparation over five years (from 2012 to 2017), the findings used in the following thematic chapters can be treated with confidence in their representational validity. In other words they are reliable samples of how and why essential artisanal gold mining practices occur. It is clear that although I was at the interface between Sides A and B (and taken by the latter to be an agent of the former), I was also treated as a participant with whom the miners (both women and men) shared useful information from their personal perspectives.

During the pursuit of collaboration between the two Sides, three sets of difficulties became clear. Sequenced in time, as per Appendix Two, research with MICA led to my questioning the role of economics, ethics, and wellbeing, in the situation. Secondly, research into livelihood practices led to my awareness of the economics involved in mitigating the environmental impacts from the miners' use of mercury. Thirdly, research into how miners perceive God in their daily livelihoods led to my understanding of social aspects within their beliefs versus that of typical EFT organisations.

The selection of a system for suitably processing the fieldwork was drawn out. Many textbooks were consulted, and in each case the opening general chapters appeared welcoming, but the later chapters became very specific within their school of qualitative research, precluding my approach. It was only when I decided to develop my own

framework of evaluation that the thematic chapters could proceed with describing, analysing, and reflecting on, the situations observed.

The most important area of methodology research was philosophical hermeneutics and the attempted reading of such notables such as Heidegger, Gadamer, Grondin, Flood and Bernstein. Their insistence that the human mind is always in the process of interpreting, empowered my own interpretive approach to the entire research project.

This chapter has recorded the textual search for methods and methodologies that enable both the actual approaches in the field and the approaches behind the analyses used in the following thematic chapters. Further records of the field work appear in Appendix Two, and in the next chapter, the first theme to be investigated (towards the ends of mineral resource justice under God), is social justice.

Chapter Four

‘Mining with God in our hearts’: Worries over community life

Introduction

Having reviewed the literature and methodology, this chapter is concerned with investigating the miners’ perspectives on social behaviour in contrast to those outlined in the Standard. The chapter introduces some of the articulated ordinary theologies, ethics, and practices of Christian artisanal gold miners in Uganda who have high expectations regarding the intervention of Fairtrade in their community. For example, Aguttu says, ‘The middlemen fear that when we are organised, it won’t be so easy to exploit us - that’s why we were so excited when we heard about Fairtrade. Before Fairtrade, we were just dying in silence’ (Fairtrade Foundation n.d.:2). She goes further, believing that God touches outsiders such as Greg Valerio and me, to bring equipment that makes mining easier. She said:

All is God, all is God, talking to Terry, talking to Greg and saying this is now the way to go ...in London ...(to) fundraise for this equipment to help these women, to help the men in Uganda, Busia district. It’s all God’s hand... His purpose has come to pass. ...I am seeing God’s hand at a time when I was told the GoldKacha¹ had come. If God has touched men and women to think they can get us from the back breaking kind of work to where we are only now in minutes able to sluice our ore, turn it into gold, then made pure and ready to be exported, this where I see God’s hand. (Aguttu 2017c)

Margaret Ongura’s testimony about the closeness of God refers to the aforementioned GoldKacha (GK), her group ‘did not even ask, they did not pray for it because they didn’t know it, they just saw God bringing it and putting it in their midst. And they are really happy to think that God has thought about them’ (2017). These beliefs about God and Fairtrade are further attested by Stephen Padde, saying that:

I believe God must have given man the vision to say there is something that I have hidden underground and then he gave the ability to extract the gold. God must have also seen the suffering that the small scale miners are going through and made some people maybe in the UK, maybe in Germany, in Europe to think so hard about us. Through them God brought the wisdom to EWAD² and to fair trade. Someone somewhere must have said what about the people in Africa? They may not have known where we are, but I think God led them to here. (2017a)

¹ The GoldKacha (a centrifugal gold ore concentrator) is discussed in Chapter Six.

² Environmental Women in Action for Development (EWAD) is a Ugandan NGO.

The thread running through these ordinary theologies is primarily concerned with the closeness of the Christian God using (as will be shown throughout the thesis) the analogy of hands (touching, opening, turning, taking, bringing) and the immediacy of his purposes. These Christians have clearly stated beliefs that their God is behind the Fairtrade interventions, and have clear expectations of how Fairtrade organisations are going to improve their present daily livelihoods, such as miners no longer suffering e.g. dying in silence or backbreaking work. The miners' faithful views contribute to 'the critical conversation that is practical theology' (Swinton & Mowat 2016:85), in discussions with others who, directly or indirectly, evaluate the situation and practices within the following sections of this chapter.

The chapter has four sections which follow the four stages of the Swinton and Mowat model of practical theology, i.e. Section 4.1 follows their first stage, which explores the nature of the situation, identifying the primary issues, and initially describing what is going on (2016:89–91). As has already been noted, ethical and fair trade organisations have a vision for social transformation in artisanal gold mining communities. Their 'oughts' for the situation are contrasted with the present situation, as perceived through the articulated concerns of Christian artisanal gold miners. Each of them focuses on two different social concerns, thus (it will be argued), creating an impasse.

Section 4.2 of this chapter follows Swinton and Mowat's Stage Two of analysis, i.e. excavating the complex matrix of dynamics within the situation (2016:90–1) continuing a critical conversation with Christian artisanal gold miners in East Africa, and the academic research community. The first subsection investigates some of the personal, family and community aspects of miners' livelihoods expressed by miners in Uganda when asked to describe how they saw God in their mining life. The second subsection evaluates social behaviour in artisanal gold mining communities in East Africa from the

academic research perspective by two communities – those who have previously studied the situation and theorists writing about social wellbeing, in general.

In Section 4.3, the subject of social justice is reflected upon theologically, following Swinton and Mowat's Stage Three (2016:90–2). Western theologies of ethics, sin, justice, and *chesed* which, as noted in the literature review, can be translated as the loving-kindness of God (Bruckner 2003:228) are brought to assist in establishing an appropriate meaning for the notion of social justice.

Section 4.4 explores attempts leading towards social transformation that have already commenced within the original situation, as per Swinton and Mowat's Stage Four of formulating revised faithful practices (2016:90, 92).

It will be claimed that a more encompassing approach, towards mitigating the negative impacts arising from the misuse of money derived within gold mining livelihoods, can include Christian miners' concerns for social transformation under God expressed through their ordinary theologies. This approach, leading out of the impasse and towards developing community flourishing, will also include evidence for the argument for social justice as an integral part of mineral resource justice, to be defined in Chapter Seven. By way of recollection, the development of justice starts with the intentions of those who mentally envision it (what ought to be practised); and the means of justice transform these intentions into the ends of justice. The ends are the tangible realisations or experiences of justice within the situation, when the new is practised.

4.1 Current Praxes

Social practices which currently arise from miners' livelihoods are described in this section of the chapter. Essentially, ethical and fair trade organisations have three concerns: with the treatment of producers in the developing world by international trade; the treatment by producer organisations on their suppliers (workforce); and the impacts of production on the local community and environment. These last two sets of concerns are set out as standards that must be met by the producer organisations before fairer trade can be implemented; whereas the first provides the motivation for involvement by EFT organisations towards more equitable trade practices.

In this section, these perspectives on social transformation are compared with the concerns raised by the miners interviewed in Kenya and Uganda, regarding social practices in the present situation. Their own descriptions of mining, processing and gold selling practices are detailed in Appendix One, but as will be shown below, it is not the laborious manual work that is of great concern; rather, it is the misuse of money arising from their artisanal gold livelihoods.

4.1.1 Social concerns from the EFTO perspective

The vision of the Fairtrade Foundation and ethics behind the movement, have been noted in the Literature Review, along with some details from the Standard. The route to fulfilling their vision is spelled out therein, over nearly 200 clauses, which outline 'the ethical and sustainable production practices that lie behind every Fairtrade product' (2013:26). The numerous standards which must be met, to qualify production practices as ethical and sustainable, are now briefly noted.

Their first chapter deals with fundamental safeguards through general requirements such as payment of taxes, an anticorruption policy, a grievance procedure, a human rights policy, risk management and remediation measures, protection of land and traditional knowledge rights. Out of 25 specific measures, 10 were added in 2015

reflecting additional rights that needed to be protected. These measures seek to improve fairness in community dealing by the ASMO i.e. with respect to the fair in fair trade. The 32 measures in their second chapter relate to the trade part of fair trade in terms of traceability, product composition, responsible sourcing, transport controls, and the use of the Fairtrade trademark but do not specify the minimum amount of gold to be traded.

The third chapter ‘outlines the ethical and sustainable production practices that lie behind every Fairtrade product’ (2013:26) through 97 standards over three sections. They include 57 clauses that ‘ensure decent working conditions’ in ‘four basic objectives: rights at work, employment, social protection and social dialogue’ (2013:38). They apply to workers employed by the ASMO and concern freedom of association, collective bargaining, rest days, overtime, paid leave, housing, pensions, and so on in a similar vein. They deal with democracy, participation and transparency within the ASMO through requirements for meetings, communication, training and administration as well as discrimination against women, disadvantaged and minority groups (2013:38–54). As mentioned in Chapter Two, these clauses are concerned with the labour conditions that would be expected in Kambani’s third level of artisanal and small-scale mining (Kambani 2003:46). Benefits from the fair trade system are conditional to the ASMO reaching and then conforming to the standards delineated in the document and requires periodic third party auditing to measure and certify this conformance. Only then will improved revenues (i.e. commutative justice) result through both the payment of a premium of US\$2000 per kilogram of gold (after refining) (2013:66), and a minimum price that must be paid for gold.³ These economic matters will be discussed in the next chapter, along with the likelihood of ASMOs sustainably exporting gold.

³ The minimum payment for gold ‘must be at least 95 per cent of the LBMA/LPPM fix for the pure content, FOB export point’ (Fairtrade Foundation 2013:65).

The fourth and final chapter deals with those requirements that are ‘unique to Fairtrade’ over another 42 standards; laying the foundations for ‘demonstrable empowerment’ and development to take place. These aspirations are to be met through the Fairtrade Premium, and the first 12 clauses explain how this premium is to be invested in ‘social, economic and environmentally sustainable development of the ASMO and its miners and through them, their families, workers and surrounding community’ (2013:55). The management of this revenue is by a Fairtrade Premium Committee which is to be set up independently of the ASMO, although reflecting (in number and gender) the social composition of those involved in gold production (2013:55). The Committee is to carry out a needs assessment for environmentally, socially and economically sustainable development of the community. At least one community development activity from this assessment is to be included in a Fairtrade Development Plan which notes what, why, when, who and how much is involved (2013:56). The agreed activities should be important to the situation, aspirations and priorities of the ASMO and the community (2013:57). After opening a separate bank account for the Premium payments, income and expenditure are to be managed transparently, and the Committee must ensure members and local community representatives are kept informed annually about the Plan’s progress (2013:58). The procedures, roles and responsibilities of the Committee also apply to a possible second source of revenue for the community, the Ecological Premium (2013:37), which will be discussed in Chapter Six. In spite of these ethical expectations of how the premium is to be managed, the miners already have to be part of a certified ASMO (they will have met 168 clauses in the Standard) and have viably exported gold, only then can financial assistance towards these social improvements can be considered.

In summary, the Foundation’s social concerns fall within two broad categories, miners’ rights in the workplace and community projects. The conclusion is that

expectations by the miners (expressed in the chapter introduction), that God has sent Fairtrade to improve their economic livelihood are not going to be met; not until the conditions set by EFT organisations operating in East Africa are met first.

4.1.2 Social concerns from the miners' perspective

In this subsection, the miners themselves 'attempt to make some initial sense of what is going on, why things are structured in the ways that they are and why people function in particular ways' (Swinton & Mowat 2016:91).

The third chapter of the Standard (as noted above) is concerned with community projects, whereas the miners in Uganda were worried about community behaviour:

At the same time when you get like in the mining sector there are a number of things that are ongoing. I think I could take a case study of this area, Tiira in Uganda here we have a tendency of men when they get money they abandon families, go drink, even defile children, use money in all sorts of things that are not godly. If a child is defiled at an early age she is not going to have a good future. People tend to marry so many women because they have gotten this money out of gold and they think this is the right way to live, they don't go church they don't have any Christian heart in them even to do things. ... We have seen gold being the source of very many evils in our societies we have seen people murdering one another just because somebody has money. Also he⁴ is using this money to punish the others or to use his money to punish the poor, to use his money to commit so many offences in societies. (Aguttu 2017c)

Aguttu strongly condemns male miners' behaviour away from the workplace as not godly – their sexual immorality where underage girls are concerned, abandoning families through drinking, multiple wives and financial irresponsibility, detracting from community flourishing even as they get money from gold. This financial irresponsibility is agreed by Rosemary Ongang'o who said sadly, that when a man:

gets so many grams and he has gone to sell maybe in Migori, then the mother who is at home is crying 'Oh my husband has gone for gold. I hear he has got ten grams, he has gone to Migori and he has come back without.' (2015)

But when women re-treat the tailings 'you cannot get a woman getting a gram, it's just a point⁵, two points, three. It is a day to day work for us to get something' (2015). Duncan Onyango agrees:

⁴ Aguttu uses the singular although she is continuing to refer to men.

⁵ A 'point' is common parlance for a tenth of a gram, even in Zimbabwe.

So the artisanal miners in this area if you look at them keenly you find most of them are mothers, some young boys, who can do it just for the sake of getting little to keep them moving. They are not earning so much out of it. (2015)

This is because the first round of processing removes the random enrichment from the original rocks and all tailings have only remnant gold in small amounts. However, the tailings contain enough to hope for a ‘little’ livelihood for women and family members ‘to keep them moving’ (Onyango 2015). While most women earn very little from their hard work, Kenyan miners reinforce the Ugandans in terms of the negative influence of livelihoods arising from gold mining when earnings are unexpectedly high.

For example, a follow up question regarding young boys missing school to work on mining sites was answered by George Odhiambo who said:

Another aspect that contributes to low enrollment in schools is due to the HIV prevalence rate which is claiming a lot of lives in the society. Men dying in a large number, leaving their responsibility to wives, and are not able to cater for family needs. These are continuous steps that make parents to be unable to cater for their children, leading to low enrollment of children in school. (Odhiambo 2014c)

The extent of deaths related to this disease was not investigated, although Aguttu also commented that ‘you know we also have, in their heart somebody thinking now that I have the ore, I can go spreading the HIV/AIDS to all the innocent people’ (Aguttu 2017c). Regarding the misuse of money, John Asembo worried:

It is very unfortunate, the wealth those people got from the mines was a lot of money and they became very arrogant and in the process the community is not happy with them. ... we don’t just want to see people get a lot of money that they are not able to control, they become drunkards, they forget about their families, their communities, they become small kings. (Asembo 2014a)

His comments are in agreement with Aguttu’s, regarding harm in the community caused by off-the-job behaviour, which are not addressed by the Standard.

4.1.3 Summarising the impasse in the present social situation

The miners’ expectations of social behaviour within the local populace were markedly different from the social restoration and transformation as published the Standard. In order to gain from the promised benefits of fair trading, and see their expectations realised, miners have to organise into sustainable enterprises and attain nearly 170 ethical (fair) standards of conformance, written internationally by non-participants, in

order to be certified. Only after certification, and after exporting gold, can social benefits accrue from the Fairtrade Premium. In any event, the Standard does not address the moral issues, arising from gold mining livelihoods that concern these miners.

To summarise, the ‘oughts’ with which Fairtrade is concerned, have to do with the behaviour of operating ASMOs; expectations with respect to the treatment of miners at work; and to social development within their community. On the other hand, Christians worry about individual and community behaviour in relation to a proximate God. Resulting from the different approaches to social aspects within the situation, it is clear that there is an impasse between them, and these difficulties are now analysed in Section 4.2.

4.2 Cultural/ contextual Analysis

In analysing community behaviour, Aguttu⁶ said, ‘I think I could take a case study of this area, Tiira in Uganda’ (Aguttu 2017c) and the first subsection opens with further extracts of miners’ worries about God, gold and community behaviour. The second subsection is composed of findings in the social situation by other researchers, split into two groups. The first group write on artisanal gold mining in East Africa and directly reinforce the miners’ concerns; and the second write on social flourishing and wellbeing more generally; with the conversations supplemented by further ordinary theologies of informants. In assessing the contributions to this section, the miners agree on prosperity for their community, but their means to its sustainability rest on individual God-fearing lifestyles.

4.2.1 Ugandan miners’ ordinary theologies

This first subsection allows the miners (women and men) to voice their experiences and opinions regarding how community behaviour may affect the role of God with respect to prosperity through gold livelihoods.

Aguttu answered my open-ended question⁷ asking how she saw God in the daily livelihood of artisanal gold mining with a monologue lasting seven and a half minutes (partly quoted above). In summary, Aguttu believes that, ‘One thing that every human being has to know is we were created by God and everything on earth was created by God including the gold.’ She continues, ‘but God can decide even to make the gold disappear ...we don’t want God to punish us in this place (she laughs) we feel God should continue to bless us, God should continue to open more and more pits’ (2017c).

⁶ Aguttu has been mining in the Busia district of Uganda since the age of twelve, and is a professional teacher, mother of four, member of the Anglican Church in Uganda and informal marriage counsellor. She speaks three languages, her proficient English has been directly quoted in Fairtrade literature, and has twice travelled to Europe as a spokeswoman for artisanal gold mining in East Africa (2017c).

⁷ ‘the open format of such interviews is crucial (especially in the early stages of a project), as they allow informants to discuss matters and concepts important to them, rather than to the researcher’ (Oberhuber & Krzyzanowski 2008:188).

George Kwemboi, a miner and pastor, agrees, ‘because everything that we got and we mention God, He will bless us and He will open other things that we are not seeing for He is the author of everything’ (2017). These were the first suggestions that certain Christian miners seemingly had an ordinary theology of a God who could have a dynamic influence on the occurrence of local gold deposits.⁸

Richard Niebuhr’s concept of surd⁹ is useful for understanding ordinary Christian theology. He applies it to theologies that are ‘logically dependent on the acceptance of a conviction that reason cannot give to itself’ (1951:111). Ordinary theologies that may appear to have irrational roots express themselves as convictions which result in justifiably logical or reasonable behaviours. For example, the apparently irrational beliefs held by many Christians in the bodily resurrection of Jesus or in the Trinitarian concept of God may then underlie rational (and faithful) behaviours. This concept is helpful when reading the quotes of individual miners and those of Christians connected to developing artisanal gold mining in Uganda.

Aguttu positively linked the giving (blessing) or taking away of gold (cursing) by God as dependent on community behaviour:

God can decide even to make the gold disappear and make it an uneconomic activity in this place then people are going to suffer so much. Like we read in the Bible of times reached when God would bring the curses upon the people, bring sicknesses upon the people until they went back, repented, and after repenting this is when God will forgive them and tell them to lead the rightful life. So we don’t want God to punish us in this place (laughs) we feel God should continue to bless us, God should continue to open more and more pits. (Aguttu 2017c)

Kwemboi worried that, ‘actually even this community (is) ... gifted with gold, but if we don’t fear God, we can end up useless people’. He added, ‘it is just Satan who diverts people’s minds ... now people become more busy, even on Sunday you want to go and work ... as if gold is more than God’ (Kwemboi 2017). This supports Aguttu:

⁸ While this may seem strange to the Western academic ‘...African thinkers have continued to elaborate essentially spiritualistic world-views whilst Western thinkers have been increasingly attracted to mechanistic world-views’ (Horton 1982:210).

⁹ In mathematics a surd is an irrational root or an expression containing irrational roots (Allen 2007g:1293).

What I read in the Bible, there is a scripture that tells us we have to do our work within 6 days and on the seventh day we ought to get to church and praise and worship the Lord. At times, we have imagined that the harder we work the better we become forgetting if it is not God's will you may work very hard for so many years but you still remain poor. What we have to embrace is just what the scriptures say, we need to fulfil what the Bible says let's work but also have time for God. (2017c)

Here Aguttu is clear that gold is created by God and that flourishing depends on having time for God, praising and worshipping the Lord on Sundays, as per Biblical injunctions. Without this, one may still not flourish, remaining poor after years of hard work; her principle for flourishing is to follow the scriptures.

Both Aguttu and Kwemboi are seemingly registering concerns about how a just Creator God may react to community behaviour regarding gold wealth. Stephen Padde, a local mining businessman, reinforced this by saying, 'The multiplier effect would not be a surprise if God turns one gram into one kilogram. He has the power to do it as long as we use the benefits in the right way to benefit the people of Tiira' (Padde 2017b), where he is referring to beneficiaries in the vicinity. Similarly, Aguttu claims flourishing could be improved through helping those in need:

I feel if we are going to look at God as the creator of everything in this world including the gold we mine and support His role and bring up our families in a Christian way and help those that are in need with the money we get out of the gold I think this is going to please God. He may bless more and more, He is a God of miracles at places where we don't feel gold can emerge we can wake up one day when we please him and do the rightful thing and use the money that we get of the gold to do things that please him. He is a God who promises to bless us and anything that we keep touching to see a blessing in our lives. (Aguttu 2017c)

Instead of the anti-social behaviour of miners, families should be raised in Christian ways and money used to do the rightful thing. She believes God will be pleased with behaviour that supports 'His role', leading to increased blessing (flourishing) through even the unexpected appearance of gold; after all He is a God who promises blessings in the lives of believers including what they touch, such as gold.

Tom Wamalwa, a local council leader who has been mining since 1990, said, 'In fact what I have is through mining gold. Since I knew gold I have never gone to slave for somebody, uh uh, it is better for me to mine and have at least some money' (Wamalwa 2017b). As well as a sense of independence through gold he has a strong sense of God's enlivening in his life:

It is God who created gold and everything in the Earth and God gave man power to control whatever is in the earth. ...The small wealth I have, it is through him. So I am very grateful on the side of God; the breathing, the moving is through him, without him I can't live. (Wamalwa 2017b)

Again there is a sense here of the present activities of God. During a focus group discussion, Margaret Ongura talked of gold in a dynamic way, 'I have stayed there for long, from 2004, at that time we were doing lots of gold rush, where it has come (gold) is where we go to mine' (2017). The movement of people following the appearing of gold deposits is a real surd to the rational Western mind, and yet within a theology of an active God it seems justified. She went on, during another focus group discussion, to claim that her group of miners, 'understand God has put down the gold down here and there and they are getting it as a group and it gives them a heart to share equally, when they are working as a group they share equally' (2017). Padde repeated this saying:

Teacher what must I do to inherit eternal life? Distribute your gold to the poor, but it is still a challenge, sharing our wealth with the people. All this gold wealth is from God and He asks us to share it with the vulnerable and He will reward you. (2017a)

These comments refer to the responsible behaviour of the miners themselves in sharing the gold wealth so that disadvantaged others can benefit. The blessing by God through gold is not meant to be taken selfishly, but shared with the community, an ideal of socio-economic justice.

Aguttu notes the opposite, sinful behaviour as one of her concerns:

So I feel when we have mining with God in our hearts, a Christian who is in the pit cannot begin having thoughts of exchanging the ore because he wants a relationship with somebody's wife. A Christian heart may not think of getting someone's daughter in exchange for the ore and have this girl defiled. ... So this is going to help us bring up people in a Christian way knowing that any thing you do against God is a sin and God doesn't want sinners. ... We feel when we train people to have a Christian heart in whatsoever they are doing, the youths, the men, the women, the girls and boys we teach them let's do the rightful thing that God requires of us. I think this will help us very much in our community, to lessen the crimes, the defilement, the spreading of HIV/AIDS. People are also waiting getting married to one wife to have stability in their homes because there are families that have broken as a result of men getting money and abandoning he thinks money is everything he can go marry and having so many children who are not even planned. (Aguttu 2017c)

Recalling her role as a marriage counsellor in the community, these words are born from experience, and as a Christian she felt free to label this behaviour as sinful (a description for further analyses in 4.3.3 below). Gold wealth is seen here as a source of very many evils and offences in society, including the spreading of HIV/AIDS, crimes against the poor and siring unplanned children. On the other hand, Aguttu sees the

development of flourishing for her community through training, which results in people having ‘a Christian heart.’

Finally, Emily Kitabire believes that Valerio opened her eyes when he talked about a ‘godly way of mining gold’ and that he also ‘opened my heart and I felt I can put in my time and serve with EWAD and prove that even mining gold, people can meet God... and we all serve a living God’ (Kitabire, Aguttu, et al. 2017). She maintained, ‘mining is not evil, mining is from God. It is people who have made it evil. ...(we are) to get what was taken by the devil and bring it back to God’s people’ (Kitabire, Ongura, et al. 2017). The Christians interviewed appear to believe in a proximate God who can both influence and be influenced by people’s behaviour.¹⁰

The examples from the informants quoted above point to beliefs in a God who is close, active, noticing, judging, rewarding, caring and involved. In terms of these active relationships, a fellow African the Ghanaian Methodist theologian Mercy Oduyoye noted how Christian appraisals of African cosmology ‘will have to focus on the reality of the relatedness of all reality with God, the Supreme Being, as the Source of all being’ (2014:322). Thus deposits of gold seemingly come and go at His discretion which is affected by the behaviour of the community. Equipment arrives apparently because those who brought it listened and responded (knowingly or not) to His will for the Ugandan community. Their underlying hope seems to be for an ongoing socio-economic flourishing by the community through the presence of gold. The gold translates to financial wealth and their desire to use this money in socially beneficial ways appears to thread its way through the findings.

The question which now arises is how do these ordinary Christian theologies of God having a proximate effect on the economics of gold mining on a day-to-day basis

¹⁰ While this may seem strange to the Western academic ‘...African thinkers have continued to elaborate essentially spiritualistic world-views whilst Western thinkers have been increasingly attracted to mechanistic world-views’ (Horton 1982:210).

compare to Western understanding and interventions to developing the social justice in the situation? As discussed in Section 4.1, the ends proposed by the Foundation are social transformation and restoration, in contrast to the miners' expectations of keeping the presence of gold by a proximate and involved God, i.e. the scope of miners' concerns within the situation is broader than those of EFT organisations. There are expectations for improved economic livelihoods through fair trade (as studied in the next chapter) which is embraced by the informants, believing it to be from God.

Even though the miners' expressed concerns are about the impact of community behaviour on the very presence of gold, any understanding of social justice as community flourishing in the prevailing situation needs to take these miners' concerns seriously.

4.2.2 Social transformation

The secondary literature will now be further examined to find critical conversation partners who may help in the analyses of the situation outlined in Section 4.1. The first group of East African research partners repeat the concerns in 4.2.1, without the ordinary theological language used by the Christians. The second group raise the general concept of wellbeing within society and their explorations of the concept warrant the inclusion of faith in wellbeing, without affording it the primacy granted in this thesis.

4.2.2.1 Social criticisms by ASM researchers

This subsection presents findings on social behaviour directly referring to the situation from both academic research elsewhere in East Africa and more from the miners themselves.

Research in Tanzania recorded a variety of sexual partnerships in artisanal gold mining settlements, which are described as 'wifetypes.' Although researchers see this

situation as resulting in interdependency and mutual commitment, they do note that, ‘women are on an unequal footing with men ...with the question mark always hanging over whether the man is committed as much as the woman ... (Where) co-habitational relations...are highly unstable (for) young girls, girlfriends and polygamous wives’ (Byceson et al. 2013:53). These social lifestyles were of concern to all informants in Uganda who often used plural words such as ‘we’ and ‘us’ in their interviews (see 4.2.1) emphasizing their worries over negative local community (social) behaviour.

In two early ground breaking studies of artisanal gold mining in Migori, Jason S. Ogola refers to the livelihood as ‘artisan’ gold mining (Ogola 1995; Ogola et al. 2002).

His second paper, co-written with Winnie Mittullah and Monica Omulo, notes that:

after Kenya’s independence, artisan miners have been the sole producers of gold in the belt. Artisan mining is an important economic sector in many developing countries, However, limited resources and training, and the availability of cheap, but potentially hazardous methods of extraction and processing of minerals can cause significant threats to both miners and the local environment. Such a scenario is being experienced in the Migori mining district. It is important to assess the scale of problems and to develop approaches, both technical and sociological, to deal with these. (2002:144)

The importance of economic livelihood within this sector is consistently overshadowed by the above criticisms such as limited training, hazardous methods, significant threats and the scale of technical and sociological problems. By the time this article was rewritten and included in *The Socio-Economic Impacts of Artisanal and Small-Scale Mining in Developing Countries* (Hilson 2003d), the word artisanal was used throughout and the sociological problems were now detailed. As examples, artisanal gold mining resulted in ‘excessive lifestyles, characterized by perpetual drunkenness and reckless marriages involving several wives. Alcoholism, divorce and remarriage are common ... disrupted general rural lifestyle, stimulating immoral practices such as prostitution, divorce and ... also interfered with youth education’ (Mitullah et al. 2003:289).

Such matters were addressed by the miners above, for example, in her interviews, Aguttu also listed abandoning families, drinking, defiling children, misusing money, polygamy, the ‘spreading of HIV/AIDS to innocent people’, and ‘having so many

children who are not even planned’ as many of the injustices perpetrated by men in the community. All ‘because they have gotten this money out of gold and they think this is the right way to live, they don’t go church they don’t have any Christian heart in them’ (2017c). Both local Christians and the international research community have the same worries about behaviour, although these as causes may have different effects.

At the end of their 2002 paper the same trio of Kenyan researchers above called for five interventions to deal with such lifestyles: providing assistance to improve skills, encouraging the use of protective gear, formation of strong mining committees, better sanitation practices and campaigns on sexually transmitted diseases (Ogola et al. 2002:155–6). The shortcoming in academic approaches is that their calls for outside interventions deny the potential for ‘artisan’ miners, who are not only skilled in their work, but mature enough to take responsibility for their own behaviour, as outlined in 4.2.1.

The means, according to researchers are through outside interventions, presumably by Government. The ends, as they see it, are fewer health and injury problems, whereas the miners wish for prosperity in marriages, families and the community. According to the miners, the intentions, as before, are to please God, through taking responsibility for moral behaviour, especially by men in the community. Although there is more overlap between the miners and the academic research community, compared to the Standard, researchers lack expectations that miners can be responsible for changing their own negative behaviour, unlike the perspective of Christian miners.

The situation has now been evaluated by the perspectives of those more closely involved, i.e. the artisanal mining community of miners, EFT organisations and academic researchers. They have contributed to the critical conversation regarding community behaviour arising from the economic livelihood of gold mining in East Africa, within the social dimension. While the predicament has been clearly understood, no viable

ways out of the situation have become convincingly clear. Furthermore, the miners differ from the others, in labelling negative behaviour as sinful; are these faith based perspectives of Christian artisanal gold miners in East Africa legitimated in the secular literature on wellbeing not discussed thus far?

4.2.2.2 Wellbeing and social flourishing

In this subsection, theories regarding wellbeing are drawn upon to evaluate social aspects in the situation described above. Wellbeing has many synonyms, as Mark McGillivray observes:

it is a description of the state of individuals' life situation. An array of different terms has appeared in the research literature to label this situation. Along with wellbeing, the most common ones include the quality of life, living standards and human development. Others include welfare, social welfare, well-living, utility, life satisfaction, prosperity, needs fulfilment, development, empowerment, capability expansion, poverty, human poverty and, more recently, happiness (McGillivray 2007b:16).

Wellbeing is the subject of research in its own right and community influence on social wellbeing is mentioned in the 'Voices of the Poor' study commissioned by the World Bank at the end of the twentieth century. It qualitatively finds: 'Three aspects of material wellbeing that are repeatedly mentioned are food, assets and work' (Narayan 2000:25). However, they are quick to note that 'material wellbeing is rarely mentioned without other critical aspects of a good life. ...Social wellbeing includes care and wellbeing of children; self-respect and dignity; and peace and good relations within the family, community and country' (Narayan 2000:26). It is stated further that 'for many, too, a spiritual life and religious observance are woven in with other aspects of wellbeing' (Narayan 2000:38). Wellbeing as conceived by Christian artisanal gold miners in East Africa is similarly inclusive of the religious dimensions of community behaviour that arise out of their faith.

Going back to the 1933 Edition of The Oxford English Dictionary we find a definition of wellbeing that includes not just 'the state of being or doing well in life, a happy, healthy or prosperous condition, and the physical ...welfare of a person or community', but also their 'moral welfare' (Murray et al. 1933d). This is an aspect of

wellbeing has not been mentioned thus far. Yet moral welfare is still important, as

Karen Scott insists in her critique:

However, our belief of what it is to be human is not just underpinned by neoliberal discourses but also by concepts of freedom, justice, equity and democracy. Wellbeing theory and measurement is predominantly located around the individual, their rights, capabilities, personal happiness and psychological fulfilment. It is almost impossible to conceive of a different way of constructing human wellbeing which would not only compromise deeply held normative beliefs, but also challenge our basic comprehension of what it means to be human. (2012:49)

Her claim for individual wellbeing includes justice, capabilities and normative beliefs all of which have bearing on the arguments of this thesis. James Griffin sees in the ‘display of wisdom, courage, temperance, industry, humility, hope, charity, justice, etc. ... the flourishing of human life’ (1986:63). He suggests a list of personal prudential values that include accomplishment, agency, autonomy, freedom from great pain and anxiety, the liberty of speech, worship and deep personal relations of friendship and love (1986:67) but, like Scott, is silent on communities, so strongly emphasized by the artisan miners themselves. A link is proposed by Sarah White and Jethro Pettit:

Well-being is a complex notion with many different dimensions whose definition is disputed. The “well” qualifier makes the concept irreducibly normative, concerned with values and assessment. Its focus on “being” suggests attention to states; not only of body and material endowments, but also of mind and subjective perceptions. In order to understand these, however, it is necessary to explore the processes through which both ‘subjective’ states of mind and ‘objective’ endowments have arisen, and to which they in turn give rise. This introduces a third, social or process dimension that shows how subjective perceptions and objective welfare outcomes are constituted through social interaction and cultural meanings. (2007:242)

These theorists have introduced a third, interactive or social dimension into wellbeing, beyond individuality and personal beliefs. For the second time in as many long quotes, theorists have picked on the normative aspects of wellbeing. Used here, as elsewhere in the thesis, normative is concerned with deeply held values which are used to assess the situation. Such moral, ethical and normative aspects of wellbeing are clearly the concerns of Christian miners as articulated in 4.2.1. The miners, too, wish for human flourishing and justice in their communities, not simply as good for individuals, community and society but under a proximate God, concerned for their wellbeing.

Wellbeing, as discovered through research by the World Bank, among the poor includes social aspects that arise out of people’s faith. Even individual wellbeing

(happiness) which is based on personal virtues includes expressions of relationships such as worship, friendship, love, politics, justice, and rights (Narayan 2000). Thus wellbeing is, according to the theorists, unavoidably normative and extends across the individual, faithful group or community; yet the understanding of wellbeing, in terms used by these theorists, has already been partially expressed by East African miners.

As will be shown in Section 4.3, there is a link between wellbeing and shalom, but that requires wellbeing to include faith, as held by individuals in their life situation. Other than warranting a faith-based approach, secular theorists are limited by their lack of theological reflection; a shortcoming to be addressed (in 4.3) which invokes the Christian God's character, purposes for, and actions in, creation.

4.2.3 Summarising analyses of social flourishing

The miners do not seem to see a secular/ sacred divide – instead they understand God to be active in the most secular of events and institutions such as fair trade. The theological end of the dimension of social flourishing for the mining community; the desired result of such faithful lifestyles is, to be blessed by God through ongoing economic livelihoods – which indicates that the purpose of the miners' sense of social justice is economic flourishing.¹¹

Their ordinary Christian theologies point to a just God concerned with relationships not only with Him but within the community, whether local or international. The deposits of gold appear to be seen as a conditional blessing by God, and so they worry over the impact of sin in the community coupled with a desire to keep the blessing of gold for future generations. The social impacts of gold mining in terms of God, gold and community wealth already concern Side B, who value their relationships with the living God. Christian artisanal gold miners in East Africa have reflected on social aspects of

¹¹ This is the subject of the next chapter.

their daily livelihoods under God and are concerned that the local community benefits directly from gold wealth, including looking after the disadvantaged. The main implications are that the miners see flourishing in strongly principled terms and it concerns three of the four significant entities in the situation – their community, the gold resource and God. Aguttu's understanding includes describing, the opposite (for want of a better expression) of wellbeing as sin (referring back to the literature review), and the miners' understanding of this handicap to flourishing will be reflected upon in the next section.

On the other hand, the intentions of the research community can be interpreted as improved community wellbeing (although not so labelled by them). Theorists argue that the intention of wellbeing is individual happiness and human fulfilment, albeit through relational interaction and cultural meaning. They acknowledge that these are subjective states of mind, e.g. this is what it means to be human and psychologically fulfilled. Their ends (in the situation) are some form of individual prosperity, the sum of which leads to a communal good life. The means to such outcomes through faith are not rigorously pursued in the secular literature, but the inclusion of faith as integral to wellbeing has been supported by theorists. The Christian miners agree on the ends of wellbeing as prosperity for their community, their means rest on individual God-fearing lifestyles, with the intentions of not displeasing God.

Both the research and the mining communities warrant faithful approaches to promoting wellbeing; a necessary part of the promotion of shalom. The situation is reflected upon theologically in next section, in order to ascertain how these additional 'oughts' or intentions of the secular research community may be contrasted with the teleological purposes of the Christian God. Furthermore, the ways of God may provide an escape from the impasse noted earlier.

4.3 Theological Reflection

In this third stage of the Swinton and Mowat model, the implicit and explicit theological dimensions of the situation are drawn out (2016:91), in order to engage local views with text based theologies e.g. biblical approaches to quality of life. This thematic chapter, like the others that follow, is concerned with the intentions, means and ends of justice as they may apply to the economic livelihood within the AGM community; here the ‘oughts’ of wellbeing and social justice are reflected upon by theological perspectives brought into the critical conversation. It may be argued that a *laissez faire, laissez passer*¹² approach to the impasse, to the differences in approaching social transformation, is acceptable. However, the critical conversation, reflecting on the situation, using Western text-based theologies of the character and purposes of the Christian God, is expected to assist in formulating approaches to resolving this impasse in social restoration and transformation.

Christian miners’ fears go beyond the social impacts alone. Kwemboi said, ‘If we don’t fear God we can end up useless people’ (Kwemboi 2017) and Aguttu fears God ‘can make it (mining) an uneconomic activity’ (2017c). They are already reflecting theologically on the situation, and believe gold wealth is to benefit their community e.g. unless ‘we use the benefits (of gold) to benefit the people of Tiira’ (Padde 2017b). The people benefit from either ‘when they are working as a group they share equally’ (Ongura 2017) or when the wealth is shared ‘with the vulnerable’ (Padde 2017a) helping ‘those in need with the money we get out gold’ (Aguttu 2017c). This stewardship of money is in contrast to its reckless use which is criticized by both the interviewees and the academic research community. Aguttu wishes the community would ‘embrace just what the scriptures say’ and do ‘the rightful thing’. After training the ‘people to have a Christian heart’ which she thinks ‘is going to please God’ resulting

¹² An English translation of the French is worded ‘leave it alone, let it pass’

in ‘more blessings we shall have even unto our grandchildren’ (2017c). These socio-economic ordinary theologies of miners’ livelihoods will now be reflected upon by Western text-based theologians, not simply for their validation (or otherwise) but to investigate how practical theologies can be formulated to address the situation (in 4.4).

The next subsection will reflect on social justice from Biblical perspectives of the Christian God, as introduced in Chapter Two. This is followed by two more subsections that introduce theological reflection on ethics and sin, which have a bearing on the situation.

4.3.1 Wellbeing in relation to God’s character

Theologians have studied the intentions, means and ends of justice within the character and purposes of the Christian God, as reviewed in Chapter Two and these are brought to the critical conversations about the social issues introduced above.

For example, the miners’ understanding of wellbeing in their community, based on the presence of gold to be mined, unknowingly coincides with T.J. Geddert’s definition of shalom:

References to peace (usually *eirene*) in the teaching of Jesus and the Gospel writers can be fully appreciated only in the light of the Hebrew concept of *shalom* ... The Hebrew term for peace means "well-being" (e.g., Num 25:12; Ps 38:3; 73:3; Jer 14:13 ...). It covers health, prosperity, security, friendship and families and it is the desired experience of individuals, families and Israel as a nation. It is present because of God’s own presence and his favor toward his people. (1992:604)¹³

These concepts have already been theologised by Christian artisanal gold miners in East Africa, as noted above. The miners’ contribution to the discourse in wellbeing is that they see God’s presence as proximate, immediate and influential on the presence of gold; this basis for economic flourishing arises from God’s favour towards his people, as follows.

¹³ The idea that wellbeing, as a partial outworking of peace whether in Greek or Hebrew, finds its fullest appreciation in God, will be explored in Chapter Seven.

The intentions of such justice and wellbeing are to harmonise with God's revealed characteristics of *mishpât/ sidiq* and *chesed* (as noted in Chapter Two); the latter being the loving-kindness, perseverance, loyalty and mercy that underlie covenant relationships between God, Israel, the church or the poor. It is to be 'the disposition of one person toward another that surpasses ordinary kindness and friendship' (Heath 2003:375), and the motivation for such a Christian approach is to be the person and teaching of Jesus, as expressed by Ronald Rolheiser:

Thus, the fuel that fires our quest for justice must be drawn from the same source as the truth of justice itself, namely, from the person and teaching of Jesus. Only by rooting ourselves there, or in similar principles that somehow take their root in God, will we find both the right vision and the right energy to offer a new order, a just one, to the world. (1999:174)

He points to a lived understanding of Jesus with respect to justice theologies and social flourishing in the world; confirming that although by definition, justice is a normative issue, it is also of concern to the Christian God. This complements the secular belief that injustice is known to all and is essentially significant for the social world, as noted in Chapter Two. Western text-based theologies of the source of justice reinforce the ordinary livelihood theologies, ethics and present desires for social wellbeing held by Christian miners. The miners believe in a righteous and just God who is concerned about the good and appropriate treatment of people within the community, whether through local or international relationships. God's righteousness and justice, far from being removed in time and space, are believed to affect the presence of gold in an immediate and dynamic manner. The miners also intend for a new and just order within their communities, for ongoing socio-economic blessings from God in their particular situation, through the continued presence of gold as a basis for human flourishing. Their faith, knowingly or not, in the *chesed* character of God informs their social behaviour in the community with regards to being kind to the disadvantaged.

The three entities of God, gold and community flourishing are in a close, even simultaneous theological and ethical relationship, a situation which will be explored further in the next subsection.

4.3.2 A theology of ethics

This subsection invokes God's action in his creation; here the theologian Christopher Wright has observed that theology and ethics are inseparable in the Bible, (surprisingly similar to the ordinary theologies and ethics of the miners interviewed above). According to Wright, there is no explanation for how and why either the Israelites or Christians lived as they did, without seeing how and why their beliefs informed what they did (2004:17). He explains his triangular model:

God, Israel and the land - these were the three pillars of Israel's worldview, the primary factors of their theology and ethics. We may conceptualise these as a triangle of relationships, each of which affected and interacted with both the others. So we can take each 'corner' of this triangle in turn and examine Old Testament ethical teaching from the theological angle (God), the social angle (Israel) and the economic angle (the land). (2004:19)

For Wright, ethical issues are related to the character, will, actions and purpose of God (2004:23). Secondly, he believes that far from the social life of the community being immaterial or incidental, its possible effect on God's behaviour makes its inclusion critically important (2004:61). Thirdly, local economics appear to function 'as a gauge for how things are going at the other two angles' (2004:77). Israel saw their land as a 'gift of the LORD to them ... provided they remained in covenant relationship with him' yet it is still God's, so He holds their community 'morally accountable' (2004:98), and these beliefs created concerns for appropriate responses by the community. Wright continues, 'the concept of the land as divine gift generated ... a wide range of responsibilities. These responsibilities can be classified broadly under three heads: responsibility directly to God; responsibility to one's family; responsibility to one's neighbours' (2004:95). The ordinary theologies and ethics of the miners have identified

God, gold, and community behaviour, as being closely linked and can also be modelled as a triangle of ethics.

Following Wright, the Christian miners' theologies and ethics could also be viewed as angles in mutual interrelationships. Based on their reflections, the three angles are God (theological), gold (economic) and community (social) i.e. the resultant blessings from, or concerns over the withdrawal of gold by God are related to behaviour by the local community. They too, see gold (as Israel saw their land) as a gift from the Lord, provided they remain in covenant relationship with Him yet it is still His, so He holds their community morally accountable. They are in agreement with this Western text-based theology, making it a contemporary issue even though Wright's study was of ancient Israel. The miners are concerned that the intention of socially acceptable behaviour is to keep the triangle (as it were) in balance, and the means include moral accountability, not just in the pursuit of individual happiness, but as a community. The end is equivalent to Wright's economic angle, the continued presence of gold to generate livelihoods.

As per the first subsection of this chapter, Aguttu is not afraid to use the concept of sinful behaviour as her label for the moral accountability of the community to God, or rather for their concerns about a possible breach with God which can upset their fragile triangle, which is now investigated.

4.3.3 Social justice and theologies of sin

This subsection overtly moves the research project from overlapping with secular concepts of social justice towards Western theologies which treat injustice as sinful behaviour, in keeping with the ordinary theologies expressed by Christian artisanal gold miners; and links moral accountability to the Divine. Yet the Biblical promise is that

God's divine action in dealing with sin encourages the kind of community solidarity demonstrated by the miners despite the lack of fair trading.

In the ordinary theologies and ethics of the Christian miners interviewed above the word sin was only used once: 'knowing that any thing you do against God is a sin and God doesn't want sinners. We have seen gold being the source of very many evils in our societies' (Aguttu 2017c). The worries by all informants, noted in Section 4.1.1, about the possible negative effect by community behaviour on the presence of gold can be interpreted under this topic, because it is the fear of a possible breach with God that is the miner's concern. Padde had said miners must 'use the benefits in the right way to benefit the people of Tiira' (2017b) in order to please God. Kwemboi agreed: 'if we don't fear God, we can end up useless people' (2017).

The liberation theologian Gutierrez, mentioned in Chapter Two, extends this theology:

Sin, the breach with God, is not something that occurs only within some intimate sanctuary of the heart. It always moves into interpersonal relationships, and hence is the ultimate root of all injustice and oppression—as well as of the social confrontations and conflicts of concrete history. (1983:147)

Bernard Ramm argues these concepts are not limited to Christianity as all world religions have a theology of human misfortune and every philosophy wrestling 'with the problem of evil has by implication wrestled with the problem of sin.' Listing 'the actual and potential evils of our world from the small hamlet or African bush village to international relationships' would mean reciting those things we would call either sin or the effects of sin when using Christian language (Ramm 1985:163). The ordinary theologies and ethics of Ugandan miners agree with these theologies relating to a breach with God and the resulting injustice within community relationships.¹⁴

¹⁴ Relationships with the earth will be discussed in Chapter Six.

Kwemboi also said, 'it is just Satan who diverts people's minds' (2017), showing solidarity¹⁵ with their community, it is Satan who is blamed for the wrongdoing in the situation, rather than people. Their perspectives agree with the theologies outlined in Section 2.3.2 where sinfulness is seen as opportunities for conversion, forgiveness, and wholeness in society; these are means towards human flourishing.

Returning to Connolly (introduced in Chapter Two), the realities of social sins in terms of social injustice and inequality require a turning of the heart back to God and to the construction of His kingdom (as per the opening paragraph of this thesis). Born out of genuine internal conversion, expressions of social virtue will go beyond cosmetic change into solidarity which is the antidote to the embodiment of social evils. Only through committing oneself to the core kingdom values of justice, peace and the integrity of all creation, will sinful social structures be transformed and healed. If justice is about right relations then the incarnation of this value is the healing and restoration of all relationships and so structures of sin become structures of grace, of salvation and of justice (Connolly 2002:116–22).

Regarding the ends of social justice, the introduction of sin into the conversation is likely to be 'an offence to reason and repelled by the intelligentsia and academia' (Ramm 1985:163), yet the miners are fearful that any reach with God may affect the presence of gold and so reduce flourishing. In terms of intentions, both the miners and Western theologians see flourishing as inclusive of a relationship with God i.e. shalom as wellbeing 'is present because of God's own presence' (Geddert 1992:604) and it is believed that dealing with sin as rupture, will promote this relationship.

This subsection has brought Western theologians perspectives of sin to bear on the situation, to complement the analyses by Ugandan miners, expressed through their

¹⁵ 'Solidarity is a theological value - and indeed a moral imperative - precisely because it is reflective of a God who is in solidarity with his people. Our experience of this God pushes us, in turn, toward an awareness of our obligation to be in solidarity with our fellow human beings' (Connolly 2002:109).

ordinary theologies in Section 4.1.1. The focus of the research is the quest for justice in the sector, not the exhaustive analyses of the ethnographic field work findings as expressed by informants, and not how their perspectives contribute to theologies established in another hemisphere. The question of sin in the situation, raised directly or indirectly by the informants, as an impasse to socio-economic flourishing, has been the subject of the critical conversation engaged in this subsection. The text-based theologians have acknowledged its reality and have provided an understanding that there can be a way out of the predicament, because sin is not insuperable.

4.3.4 Summarising applicable theologies

The ‘oughts’ reflected upon in this section draw from overtly Christian literature, providing insight into the values which underlie the intentions and means of social justice. They differ from the ‘oughts’ enunciated by the EFT organisations and academic community, where social transformation is motivated by ‘labour rights’ or personal and community wellbeing, as opposed to walking in God’s ‘ways’ (Psalm 81:13 NASB).

The aspirations expressed by Christian miners, their ordinary theologies, arise out of an understanding of God’s character which motivates social justice towards harmonious and communitarian lifestyles. The means towards social justice are in accord with those noted in Chapter Two, where Hartropp posited that promoting justice involves appropriate treatment usually in a relational setting that enables humans to flourish, according to the norms set by God in each particular case (2007:27, 89).

Their intentions are in parallel to Wright’s understanding of an ethical triangle; the miners see God, both as a proximate cause for the economic presence of gold and who is influenced by community behaviour. They believe the social angle (community) may have immediate consequences on the economic angle (gold) through the theological angle (God). As a consequence of the miners’ belief in the simultaneity of effects on all

three angles, they seek to keep their holistic triangle of ethics in balance. The miners' theological evaluations also extended the scope of justice to account for sin in human behaviour. Albeit with the end in mind of sustaining their economic livelihood; their intentions demonstrate the compassionate, forgiving and loving-kindness characteristics of the just Christian God; and the vocation of artisanal gold mining can be inspired to fulfil these ways of God.

4.4 Formulating Revised Practices

In Stage Four of their model, Swinton and Mowat state:

for the practical theologian, action always has the goal of interacting with situations and challenging practices in order that individuals and communities can be enabled to remain faithful to God and to participate faithfully in God's continuing mission to the world. (2016:263)

This section now follows their dictum in envisaging possible practical ways forward for the future mission of 'Mining God's Way.'

The previous three sections have noted issues and concerns in the situation, regarding the social dimension of justice. Some of these have included justice in the practices of ASM organisations; in financing social projects (health, education); in the behaviour of male miners; in the sharing of gold wealth; in misspending livelihood incomes; drunkenness and the spreading of HIV/ AIDS; to name a few. Theological reflections then brought Biblical foundations for ethical social behaviour to overcome sin, and to promote wellbeing and shalom, in the situation. In all three stages there are either calls recommendations, or indications, for improvement. As examples, Aguttu had noted the need for Christian training 'we feel when we train people to have a Christian heart in whatsoever they are doing, the youths, the men, the women, the girls and boys ... I think this will help us very much in our community' (Aguttu 2017c). This can be coupled with the recommendations by the academic research community for interventions to deal with miners' lifestyles: improving skills, using protective gear, formation of strong mining committees, better sanitation practices and campaigns on sexually transmitted diseases (Ogola et al. 2002:155–6). Finally, within their Constitution, Section 5: Principles and Values, MICA noted:

e) Education, training and information. The society shall foster reciprocal, ongoing education programmes for members, leaders, staff and the community so that they can teach and learn from each other or from the appropriate resource persons in understanding and carrying out their respective roles (2011).

The Executive of this ASMO have been expecting me to help them in this objective since 2014. This was reinforced by Duncan Onyango who complained, 'We need to have an organization that is embracing holistic development. ...The whole village

needs to develop; after all, what legacy will you leave behind if that is not experienced or that is not realized?’ (2015). Rosemary Ongang’o said:

That was one of our proposals to have a maybe a counseling desk in MICA where we can maybe group the men ... we have something or an issue to put them together. Just to have something like a school to counsel them. ... Those who are going for training of mining and that is where you can get a way to talk to them and maybe counselling them in the misuse of cash. (2015)

The concern for counselling was echoed by Sister Rose who, along with Fathers Jacob and Moses (all interviewed at the Macalder Catholic Mission), believed the church should be involved; Christians are there and can educate miners on how to increase their standard of living. Within the Luo understanding, Father Moses talked of the good life under God as ‘mochwere’ where happiness ‘mo’ can come from gold as ‘blessed money’ from the hand of a good God ‘Nyasaye ber’ (2014). Sister Rose felt the approach of Mining God’s Way is good, to prove good mining, before sharing the gospel and how to use money for the good life, to involve different churches, but a syllabus is needed (2014). I met an Anglican Minister, the Rev. Captain Simon Okoyo in 2011 and interviewed him twice in 2014. He was very keen to see Mining God’s Way as evangelism, as ‘inserting’ (*sic*) into the miners’ world, with reference to safety and healthy living through simple Bible studies. According to Okoyo these studies are to promote holistic shalom, ‘social, physical, health, spiritual, mental, i.e. a totality of peace. However, according to Psalm 90:17,¹⁶ God must be in it, work must be connected to God, and family, everything; and without God you get nothing!’ (2014). As a result of his enthusiasm, knowledge, and role within the local church, he was commissioned to lead the new Miner to Miner Ministries in Migori County, Kenya, and a small committee including local Christians and I was set up in Masara to provide accountability. A building on Asembo’s property was given as an office to the ministry, which was large enough to double up as a training centre. Okoyo has been paid by the

¹⁶ This reads ‘May the favour of the Lord rest upon us; establish the work of our hands for us – yes, establish the work of our hands’(NIV 1973).

International Miner's Mission¹⁷ since 2015, along with their other indigenous evangelists, missionaries, and pastors, who are based in their home countries. He has been pastoring and leading Bible studies in this office or visiting mining sites every Tuesday since then, naming his initiative with men as the 'Mining God's Way Club' (2016) (also Appendix Two Section Eight).

In 2019, the Miner to Miner Ministry further embarked on social transformation within the nearby mining village of Masara by establishing the 'Mining God's Way Hotel' with Okoyo, as a hub for the community. Their fund raising brochure reads:

Masara is a small gold mining town in Western Kenya. As well as being home to several thousand small-scale miners, and 20 bars, most of which double up as brothels, since 2019 ... Miners now have a wholesome place to socialise and hear about this amazing opportunity to live life 'God's way'. The 'Mining God's Way Hotel', which is a cafe run by the local pastor Simon and his family, serve 50+ miners daily and the numbers are growing. ... We (will) equip each hub with basic pastoral and ministry training as well as resources and tools, like bible study notes, prayer suggestions and the 'Mining God's Way Handbook', a resource that helps relate the decisions miners are faced with to biblical guidance. (Read 2019a)

The first hub, in an old storeroom cost £2000 to redecorate and set up to provide meals, which was also paid by the International Miners' Mission.

These are the practical beginnings of an East African response to the miners', MICA's, and the local church's call for training – in wellbeing under God; in Christian discipleship; and in better ways of mining. It also answers the call by the academic research community for interventions, albeit that the response is neither from Government or NGO agencies. Practical activities using local capacity builders, such as Okoyo, answer the more indirect calls, whether by theorists for social wellbeing, or by theologians seeking social justice towards shalom. What is being learned, from this first cycle of practical theology and qualitative research, will guide future interventions (here and elsewhere) by Mining God's Way as mission to artisanal gold mining communities.

¹⁷ <http://minersmission.com/> accessed May 2020.

Chapter Conclusion

The chapter has presented evidence that there is a need for action towards dealing with perceived social issues related to artisanal gold mining livelihoods. While the intentions of the Foundation (social transformation and restoration) through their means (conforming to international standards) towards their ends (fair trading of artisanally-mined gold) are good, their concerns do not adequately suit the situation. Nor do they overlap with the miners' concerns; leading to an impasse within the promotion of social justice. All the Ugandan miners interviewed are linked to these interventions by the Foundation through their local project partner, EWAD, who assisted with the fieldwork there. My queries into how they saw the hand of God in their daily livelihood provided findings regarding God, gold, and the community, whose simultaneity in ethical balance was unexpected.

Any faithful development of social justice in the East African situation needs to be aware of the ordinary livelihood theologies, ethics and practices of Christian artisan gold miners. Thus, according to the miners and other Christian leaders interviewed, the intention of any justice must be to please God. The means include using any one sent by God into the situation, whether or not such persons are aware of their God-inspired mission. The end of such justice is community wellbeing under God and this wellbeing is generated through the blessing of an ongoing presence of gold in economic quantities, for both now and future generations. In summary, a holistic understanding of the just use of wealth from mineral resources (money blessed by God) includes awareness of those social aspects of off-the-job behaviour by miners that unwholesomely impact their community; and this goes far beyond the limits of the understanding of social transformation by the Foundation.

Some academic researchers in East Africa support the miners' concerns over community behaviour, noting the sociological problems of health, marriage and family;

yet, they do not cast their concerns as possibly causing a worrisome breach with God, as the informants did. Wellbeing theorists, with societal perspectives, working from the base of individuals, families and local groups acknowledge faith, but are limited by their own secular approaches. Whereas, the informants have extended the concepts of wellbeing to include the presence and favour of the Christian God, and introduce the worrisome risk that God may remove the blessing of gold for community flourishing.

Harking back to the Introduction; how may the miners' intentions, means and ends of social justice inform any Christian mission seeking involvement in the redemption of God's creation? Certainly the mission must similarly intend to please God. Its means, such as Miner to Miner Ministries, have already included social dimensions in their approaches, addressing lifestyles by offering an alternative place for leisure activities, e.g. the Mining God's Way Hotel; and Okoyo has begun training with miners to promote their wellbeing, using his own Bible studies. Thus, in collaboration with the miners and local church personnel, the ends of such a mission should be the establishment of community flourishing under God; or as Geddert terms it, shalom.

The thesis sub-question regarding the extent ordinary livelihood theologies, ethics and practices of miners inform social justice in theory and theology, and approaches to developing social justice, has been answered. Their holistic approach to the impacts on the community, arising from livelihoods derived by artisanal gold mining, allows the chapter to make its partial contribution to justice within ASM development theory.

Once economic and environmental dimensions of justice within the situation have been investigated in Chapters Five and Six, claims will be brought into Chapter Seven arguing for the intentions, means and ends of a more encompassing and faithful mineral resource justice as the overall thesis contribution to ASM development theory. The next chapter directs the study into researching the Foundation's wish for economic restoration and transformation.

Chapter Five

‘Soon touch bigger, bigger monies’: The struggle for economic justice

Introduction

The chapter is a study of the economic dimension of justice in the situation; in the light of difficulties with production, financial, and organisational issues, which were observed in the situation. The title of this chapter is taken from Aguttu, referring to the proposed Fairtrade intervention, who said, ‘We will soon touch bigger, bigger monies that we have never touched before, so when we have the godly heart in us, we are going to invest this money rightfully’ (Aguttu 2017c), reflecting on her expectations of improved revenues for their artisanal gold. Members of MICA, which was set up to *inter alia* buy and export gold, according to its constitution as a mining co-operative registered in July 2011, will make a major contribution.

The events, recorded during the first fieldwork visit (described in 5.1.1) with Valerio, will substantiate my choice of the word struggle in the chapter title. Further, as will be shown, Valerio’s assertion in his auto-biography *Making Trouble: Fighting for Fair Trade Jewellery* (2013) that, ‘Fair trade equals economic justice for the poor’ (2013:84) is problematic. He initiates the critical conversations that follow, with three of his efforts towards fair trade and therefore economic justice in the East African situation under discussion. As a dialogue partner, his ‘oughts’ are supplemented from two EFT organisation documents that, as will be shown, are concerned with fair trade (commutative justice); with fair production (responsible mining); and with fair ownership (legal property rights).

Similar to the previous chapter, this investigation into the intentions, means and ends of economic justice is rooted in the ordinary livelihood theologies, ethics and practices of Christian artisanal gold miners in the East African situation.

In terms of achieving improved gold revenues through fair trade, Section 5.1 investigates what is fair and what is trade-able in the situation. In other words, as well as judging gold production practices as fair, gold must be available in enough quantity to be traded; and these two matters form the ends (trade) and means¹ (fair) within the present situation that will be described. Assessments of the findings will show that there are three impasses to reaching economic justice in the present situation

Section 5.2 includes the perspectives of East African miners, and the societal and global perspectives of ASM researchers, on the economic importance of this livelihood. Theorists (including Aristotle) concerned for the means of economic justice are also included in the critical conversation. This dimension contains the subset of commutative justice (fair trade), hoped for by artisanal gold miners in East Africa.

In Section 5.3 theologians who are concerned for the intentions and means of economic justice in general are investigated. The critical conversation is directed towards achieving such economic flourishing within this sector of mining in East Africa, fortified by Biblical expositions of the character and purposes (or ways) of the Christian God.

The fourth Section assesses initial plans for the situation; towards acquiring equipment to be based at the Hub (mentioned in 4.4), a ‘mining God’s way’ shaft for training miners, and an online fair trading facility – tangible ends of justice.

In order to fulfil Valerio’s intention of economic justice through fair trade (i.e. improved economic flourishing from commutative justice), the chapter will argue that significant capital is required in the situation. It will argue that the ends of economic justice go further than solely fair trading, and these ends are dependent on the means of just resource development, specifically financial investment – however risky.

¹ As a reminder, the intentions of justice are the ideals; the motivations that are held by those who envisage what ought to be occurring. The ends of justice are to be manifested in the situation (the end result of development) and the means translate intentions into ends.

5.1 Current Praxes

This section, following Stage One of Swinton and Mowat's model examines the present situation from the perspectives of the intervenors (individually or corporately), and the ethical articulations of the miners. It will be claimed that there are three impasses regarding the promotion of economic justice in the situation, and each will be discussed separately.

The three subsections are based on Valerio's efforts towards fair trade and therefore (in his words) economic justice, in East Africa. The first critically investigates the impasses which arose when he and MICA attempted to deal directly with each other.

The second subsection investigates his short-lived plans for a private company to invest in a centralised gold processing plant to overcome some of the shortcomings in his first intervention. The development company, based in the UK, was to partner MICA in enabling improved economic livelihoods, but there were problems with the legal status of MICA's mining sites. The conversation then critiques the Kenya Mining Act 2016 for the role it plays in the legislation of artisanal mining. In spite of beliefs by the Foundation towards a simpler formalisation of artisanal gold enterprise, another impasse arises here.

Thirdly, in the years before these events, Valerio successfully campaigned for an institutional approach to fair trade in the jewellery sector, resulting in the publication in 2013 of the Standard. This ethical approach to economic justice is critically evaluated in the third subsection, bearing in mind the unavoidable, practical economic findings from his first direct intervention. There are also concerns expressed by individuals within the Foundation's partner organisations regarding the present state of ASMOs in East Africa, causing the likelihood of a third impasse within attempts to improve economic justice.

A final subsection will conclude with comments on the triple impasse facing the promotion of economic justice, for artisanal gold mining livelihoods in East Africa.

5.1.1 Valerio's direct dealings

I accompanied Valerio, in November 2011, for the first ever purchase from Africa of 750g of gold, using what would hopefully become a system for fairly traded gold. As described in Appendix One, the normal practice (in the absence of being able to export directly) is to dig and process the gold and then sell it to local agents who are based in nearby shopping centres, and with whom a price and purity are negotiated, upon which cash and the beads of impure gold change hands. Valerio had advanced US\$3500 to MICA to buy a gold export licence from the relevant Ministry in Nairobi, prior to our arrival, and this money was to be recouped from the subsequent sale of either gold or jewellery. MICA had managed to get around 300 grams of gold before our arrival and needed money to buy the rest and more, hoping to accumulate 1kg of gold in the following days. Arriving in Migori, Valerio then organised for a cash advance from a jewellery company in England (hereafter known as X, in order to preserve its anonymity), which was transferred to a local Bank to allow MICA to purchase gold supposedly from their members. The money was duly transferred to MICA's foreign currency account in a bank in Migori, but before it could be withdrawn, it became apparent that the gold shortfall could not be made up by MICA members or other local miners. The Co-operative's Executive members then approached a local agent to both sell them the required gold and smelt all of it on their behalf, as they had no furnace.

This the agent outright refused to do, as this would be supporting new competitors who would then independently export the gold, threatening the wrath of his usual network of gold exporters. Those higher up in the clandestine system were alerted by MICA's efforts to acquire gold and they relayed threats and intimidation, via MICA's Executive to the extent that Valerio fled across the border to Mwanza in Tanzania while the situation cooled in Migori. The sale collapsed and the money (which never left the Bank) was eventually returned to the UK.

During these activities, George Odhiambo and I visited mining operations around the county, and just prior to Valerio's departure for Mwanza, we returned to Nairobi on my way back to the UK (Garde 2011). Valerio returned from Tanzania to briefly meet with the Executives of MICA, before repatriating to England. He agreed to fund further purchases from miners (not necessarily members of MICA) and two more purchases of gold were made in 2012 by MICA using cash advanced by X Jewellery. In both cases, the estimated weight and purity paid for and exported was more than that measured upon arrival at the customer's refinery, which resulted in X losing money and no more attempts have been made to trade with MICA. Nor has the licence fee been repaid; Valerio offered them a way to honour their debts by giving him one troy ounce of gold, then worth around £930 (Valerio 2018). The export licence lapsed after a year and MICA has not exported gold subsequently (Opiyo 2014; Read 2019b). The chapter investigates the means required to overcome the impasses in achieving the export alternative sought by MICA; i.e. the ends of fair trading within the situation.

From X Jewellery and Valerio's perspective, there were high risks, both personal and financial. Artisanal gold trading is relatively obscure and the boundaries between impoverished miners, on the one hand, and illegal trade, gold smuggling and criminal activities to defend interests, on the other, are blurred. The dominant group are the chain of middlemen who buy small quantities of gold from individual miners, smelt it and sell to licensed or illegal exporters. I witnessed tension between them and Valerio, an outsider who attempted to rework the economics of gold sales in favour of artisanal miners. Unable to interview MICA's Executive Members at the time, I pursued the subject three years later when I was back for field work in Migori County.

5.1.1.1 MICA's views of Valerio's direct dealing

Interviewed in 2014, Odhiambo still maintained MICA should 'prepare its members to look to business with X' jewellery company. Looking back over the challenges of the

past few years, Odhiambo is sure, ‘trust has been built with Greg and X (Jewellery Company), nothing comes on a silver plate’ (NB1p6). As Asembo expresses it

We don’t want to repeat our history which is part of our undoing and most people would not be happy with us. ...we are all committed to that transparency and accountability, nothing less than that. Partners must build on our strength and uplifting our weaknesses ...as long as we are well understood. (Asembo 2014a:3)

These phrases indicate a commitment to ethics, not entirely borne out by their financial relationship with Valerio, but Asembo continues:

A time of desperation is also a time for reflection that makes you work better. So even for MICA these three years have been struggling with licenses, with our own structures, looking for funds, we can’t give up. The spirit in MICA is to achieve what we want in a transparent manner. (Asembo 2014b:9)

In spite of the rhetoric, more than eight years later there had been no response from MICA to settling these debts (Valerio 2016; 2020) and this allows for the legitimate question to be asked: where is the commutative wellbeing for X Jewellery dating back to the 2011 and 2012 gold trades by MICA? However, as quality in relationships affect commutative justice, ‘then there are always, in any given economic setting, responsibilities on both (or all) sides to act justly...Justice is not one-sided, but mutual’ (Hartropp 2007:161). It would seem therefore that Valerio and X Jewellery have been treated unjustly by MICA and this needs further analyses.

Father Jacob of the Macalder Catholic Mission added further context when interviewed: ‘The gold miners mine the gold this morning, sell it this afternoon, spend all the money tonight and have to go back to the mine tomorrow to start over.’ They reminded him of fishermen who believe there will always be stocks of fish ready to be harvested whenever money is needed, there is no need to invest the proceeds of fishing, or worry about the future (Jacob 2011). This attitude is viable when the product and the market are in close proximity, allowing for immediate sale to the local gold dealers offering ready money to the miners. When the mines and markets are far apart, time and money are needed to accumulate enough gold for export and there is a further time gap for the sales revenue to be realised. This was true when Valerio intervened and because

MICA had not accumulated the financial wherewithal, they incurred their debts with him. It can be assumed that because MICA has not exported gold since then (Opiyo 2014; Read 2019b), that they still haven't raised the requisite finances.

5.1.1.2 Assessing the impasse in direct dealing

Several noteworthy issues arose from the events observed, both in 2011 and during the subsequent fieldwork in 2014, when the sale of gold beads by a miner was described (in the *vignette* inserted earlier within the thesis introduction). The miner was able to sell his beads of gold immediately, but it is more than a hundred-fold increase from this sale of 4.6g to accumulate 500g for export. The history of MICA's gold sales indicated two major barriers (time and money) faced by MICA in trading with off-shore customers. Aggregating between 500 and 1000 grams of gold, smelted into an ingot for export, is not easy when artisanal miners work from a few tenths of a gram (known as points) up to tens of grams at most. Any aggregation will take time, yet as observed by Crispin Kinabo, miners seek 'quick cash returns' (2003a:314) and are not willing to wait for their payments. Additionally, as noted above, at the time (December 2014) the price of pure gold was about £30 per gram, this means an ASMO such as MICA must have both working capital of at least £15 000 to immediately pay for small quantities of gold and the time required for accumulating at least half a kilogram ingot of smelted gold for export. The reason for this quantity is that the rate charged by international couriers for secure transport of gold is fixed; it is not dependent on volume transported at these lower quantities (Valerio 2011). The expensive cost of insured airfreight must be spread over as high an amount of gold as possible. Without external financing, MICA does not have the wherewithal to establish such a gold purchasing and exporting business, so there have been no subsequent sales of gold. Also, in order to ensure MICA does not need to purchase from others (thus incurring the wrath of existing dealers) it needs

financial capital to buy mining and processing equipment for its members to produce sufficient quantities of gold.

In summary, the barriers to export from MICA's perspective include the lack of capital on their part to buy and sustain the export licence; the lack of production by MICA's members; the lack of working capital to buy an exportable quantity of gold; and MICA's lack of equipment to smelt the gold. These all contribute to the first impasse observed in MICA's attempts to export gold, and, I believe, in their inability to repay the debts incurred with Valerio.

In 2012, Valerio enquired into another approach for assisting MICA and the next subsection turns to investigating his hopes for a possible investment opportunity with MICA as a partner in developing economic justice.

5.1.2 The Fair Gold Development Company

Immediately after our return from the scoping visit, Valerio and I enquired into a business investment that would partner with MICA and this (the second of his three sets of endeavours) is now brought to the critical conversation considering economic justice in the situation.

Maintaining he 'would never refer to myself as a capitalist, but I was pursuing relational economics based upon the idea that God is a divine relationship Father, Son, Holy Spirit' (Valerio 2018), Valerio did try to establish the 'Fair Gold Development Company' which was to be made up of UK based Christian investors. It aimed, firstly, to commission a mercury-free centralised gold processing plant, and then purchase the gold produced from this facility for export. I drew up a number of businesses plans and project proposals, which, in partnership with MICA would allow them to benefit from the financial incentives offered through the Foundation; such an international business joint venture with an ASMO would have been a pioneering initiative (Garde 2013).

However, while holidaying in Kenya in 2012, James F. (a possible investor) visited MICA and reported back that as their mining operations had insufficient legal status, he could not recommend the business proposal for investment (F. 2012) and plans for the company went no further.² Their legal status was substantiated by Asembo, ruing their predicament:

We knew when James (F.) came from the UK we had an export permit, but only a PR (Prospecting Right) and all the gold you get should be handed over to the Government, it should not be taken anywhere. If you sell the gold from the PR you are stealing from the Government, they can stop you in one day and arrest you, and take all the money because it doesn't belong to you, it's for them. So a PR is not good for artisanal miners, we are not doing exploration, we want gold for sale not to take to the Government. (Asembo 2014b)

The visit by James F. added impetus to MICA's attempts at becoming legal. For example, during the fieldwork I had a conversation with Albert who 'heads up' another ASMO, the Copper Hill Savings and Credit Co-Operative, which was engaged in mining at the old Macalder Copper Mine. He asserted that they have 'dug tons of rock underground' which has been bought by 'agents on behalf of exporters to China.' With regards to MICA, he scoffed that they were a 'briefcase co-operative' unlike his own that did 'actual mining for the Chinese!' (Albert 2014). The next day Odhiambo admitted, 'when Julius is gone, it seems MICA does go in his briefcase!'³ In response to my concern that other than a few more members there appears to be no substantial changes in MICA's activities since 2011, Odhiambo agreed, claiming, 'MICA remains focussed on establishing a legal right to mine for them, and all Kenyan ASM' (Odhiambo 2014a:1). Regarding James F., Odhiambo went on to explain:⁴

mining is not a simple task and needs a lot of money to be invested into it before getting any profit. ...we thought it wise that ...we should put in place the legalities that are governing the mining sector.

² In spite of the failure to incorporate the Fair Gold Development Company, its three aims continued to drive the practical research and inform the categories of this thesis. There aims were coupled to theological concepts, firstly, *mishpâṭ* and socio-economic justice and the ethical trading of gold leading to mineral wealth creation. Secondly, *hesed* and sustainable care for God's creation through human stewardship and the commercial use of mercury free gold processing equipment. Thirdly, shalom and the promotion of AGM community flourishing in collaboration with local churches in East Africa (Garde 2013).

³ Referring to the allegation that MICA is a 'briefcase co-operative' which only exists on paper and does not mine anything.

⁴ All the interviews with the MICA executive members were conducted in English and what follows is a transcription of Odhiambo's thoughtful response.

Because by then an Act of Parliament which was existing and still exists to date does not recognize artisanal miners ...it means facing the law that is why MICA started here. We are all concerned about putting the legalities in place, because it would be of no use to ...start operations and the Government comes and puts that investment to standstill as you are not legal. ...Julius... (is) mandated by the members of MICA to go through acquiring the necessary legalities and to involve other interested parties and why, to date, we are getting in the network system. (2014a:2)

Julius Opiyo was equally adamant, ‘mining was one of the key sources of livelihoods for our people and without proper organization anybody could come and displace our people’ (Opiyo 2014:3). This explained the focus and behaviour of MICA in 2014, and Odhiambo was correct when interviewed. Artisanal miners are now subsequently recognised in the Republic of Kenya’s Mining Act 2016, and their status regarding mining rights and resource development will now be discussed.

5.1.2.1. MICA and the Republic of Kenya’s Mining Act 2016

MICA had been long waiting for the new Mining Act, and this critical document will now be investigated to see how it contributes to legal resource development through a partnership where MICA is concerned. The literature review noted how one aspect of economic justice has to do with property ownership, expressed in Kenya’s Mining Act as ‘mineral rights’ which are held through ‘licences’ or ‘permits’ (Republic of Kenya 2016:4). Of concern to the thesis are the sections pertaining to ‘artisanal mining’ which ‘means traditional and customary mining operations using traditional or customary ways and means’ and this activity requires an ‘artisanal mining permit’ (2016:4, 96).

Regarding the difference between traditional and artisanal mining, Odhiambo said:

artisanal gold mining is a kind of mining ... with a mindset that is slightly above the local or traditional way of mining. ... Traditionally people were doing mining with a chisel and a hammer and that is all. ... As in traditional I mean working not using the right equipments, or at least an improving mining equipments like crushers, compressor. Artisan mining is that low scale of mining but is ... maximizing the production of mining to somehow change the living standard, in simple terms I would say that. (Odhiambo 2015)

Odhiambo is able to differentiate between the two methods of mining unlike his own Government and he is keen to see the standards of living of his fellow miners improve by the use of basic mining equipment.

Nevertheless, according to the Act, with regards to artisanal mining the Director of Mines is to establish County offices of the Ministry headed by a representative who

shall manage artisanal mining permits, operations, training, and importantly ‘facilitate the formation of artisanal association groups or cooperatives (and) promote fair trade’ (2016:93). At first sight this is indeed a step towards just resource development. Each county is to have an Artisanal Mining Committee which includes three persons elected by the aforementioned county association of artisanal miners that will advise the Director’s representative. (2016:94). Unfortunately this promising beginning of licensing artisanal miners and allowing long term development is curtailed by the next clause. This section states that ‘a permit granted under this Act shall be valid for a period three years from the date of issue and shall be renewable upon application for one more term’ (2016:96(1)). After six years the holder of an artisanal mining permit is to convert it to a small scale permit (2016:96(2)). There are many conditions with regards to a small scale mining permit as per the Act, but critically the criteria for small scale mining specifically preclude the use of ‘mechanised mining technologies, chemicals including mercury and cyanide, or explosives’ (2016:140(g), Second Schedule 2(b)). Except for river bed panning, all gold mining underground in Migori is in hard rock geology (Sanders 1964), which requires the use of drilling and blasting. Whilst it is conceivable that the use of mercury and cyanide can be phased out by this change in permit holding after six years, the ongoing use of explosives is unavoidable and will cause the miners to remain law breakers. That is the miners will continue to buy their explosives illegally (as was noted during fieldwork) and face due penalties. These activities will perpetuate ASM in Migori as being ‘characterized by informality – that is, a large degree of autonomy of national social, legal and economic regulations’ (Heemskerk & van der Kooye 2003:662). There can be no legal development of gold resources through banning an integral part of mining livelihoods – drilling and blasting hard rock in order to extract gold ore from underground, as presently used throughout an entire sector of the Kenyan mining industry. Once again artisanal mining faces

another systemic problem to developing economic livelihoods, this time caused by their own government.

In terms of their rights to the gold resources, Odhiambo is aggrieved by the Act:

You are right there but you are denied the right to enjoy the resource that God pulled down to you as we read in Job chapter 28 from verses one to ten. What are the realities? What are the options? We have to look into the articles very critically ... and see how they can influence the poor miner down there. (2015)

The reactions of East African artisanal miners to the gold in their vicinity versus the attitude of their Government are testimony to the assertion that ‘a property right is a complex of feelings of approval with respect to an object’ (Silver 1989:13). This complexity is demonstrated here, where gold is regarded as a God-given resource to benefit the local poor.

Secondly, it is instructive to see how the Government of Kenya legislates the sale of gold in its Mining Act which states that ‘the sale of minerals won by an artisanal miner’ shall be regulated by the Cabinet Secretary (2016:100). Specifically a ‘mineral dealers permit’ shall be held by a Kenyan citizen who has only the right to buy and sell locally, not to export, and the permit shall expire at the end of each calendar year (2016:164). The permit holder is not required to keep any records of transactions, nor are there directives regarding the onward selling of these minerals; so the lack of accounting and ignorance as to where the gold is going along the supply chain, remain unchallenged by law.

MICA is aware of the perpetuation of legal complications where artisanal gold mining in Kenya is concerned, especially regarding their ability to source gold from other mining sites used by its members. Bearing in mind the difficulties in sustaining their legal rights and for the host of production and financial problems listed above, MICA has not pursued certification with any EFT organisation.

5.1.2.2 Fairtrade and formalisation

As examined above, one of the stumbling blocks that troubles MICA with the Standard is its emphasis on the legality of mining rights held by ASMO members. The artisanal gold miners of Migori are atomised into hundreds of river-bed panning, dump retreatment, and underground mining sites. Each of these sites yields tenths of grams or, at most, a few grams of amalgam (gold) on a daily basis. In order to accumulate these into exportable quantities, the Standard demands a ‘System of Production’ which is both a complete register containing ‘declaration numbers, concession numbers and other relevant official data’ for all participating miners and ‘a mining plan which indicates clearly where mining and processing activities take place.’ The System of Production ‘includes all areas in which the ASMO or its miners have or are granted land-rights; the ASMO or its miners have or are granted mining rights’, in other words where the ASMO has legal authority. It is also to show ‘the areas and miners which are excluded from the scope of the ASMO (areas and/or miners excluded from the System of Production are entirely excluded from the Fairtrade supply chain)’ (2013:3.1.1).

The research showed only Asembo has a static mining site that continually produces gold. The other members were extremely mobile working over a wide area (up to fifteen kilometres apart) on different sites, as noted when visited during different sessions of fieldwork. They struggled to sink shafts or retain possession of their sites for a period sufficient to be included in the System of Production required by the Standard. MICA can only comply on Asembo’s mining site, a parcel of land he owns, but over which he only has a prospecting right, as noted above. In order to make up the export volumes, other suppliers must be sourced. So as Asembo said, ‘If you have standards that you don’t understand it will force you to cheat, and cheating is not part of MICA’ (Asembo 2014a). The system of production with its emphasis on legal authority further hinders

certification, and the new Kenyan Mining Act of 2016 does not assist the miners in the long term.

In a personal interview, James Mwai (then a Senior Manager with Fairtrade Africa) offered a way forward:

Within fair trade we understand and approve formalisation as a process with specific outputs. The Fairtrade Gold Standard is itself a formal way of working with specific, measurable and agreed upon or formalised objectives. ... (e.g.) the child labour policy and keeping of accounts/ records are formalised outputs i.e. they are clear, well understood, applied consistently and based on norms and regulations. When an ASMO is able to trade in a global supply chain, it means it has been 'formally' recognised. (Mwai 2015)

This places the whole process of formalising back onto the shoulders of sustainable ASMOs which, as will be shown below, are part of the problems even before corralling independent and scattered gold miners into their supply chain. While Mwai's solution again stresses the inescapably normative role of fairness in their approach to development, there is simply no way of generating the volumes of gold required to fulfil the trade part of fair trade from verifiable systems of production. Yet the hopes and expectations of artisanal miners for fair trade remain optimistic, as evidenced by the fieldwork findings, including those from Uganda (as per the title of this chapter), and are investigated in the next subsection.

5.1.2.3 Assessing the impasse in partnerships

A second impasse confronts the pursuit of economic justice in the livelihoods of miners, the risks involved in financial partnering with an ASMO who are already breaking their national law by using explosives and mercury on sites that cannot feasibly be either legalised or formalised. The barriers to legalising the mining operations as artisanal operations have to do with time; with the Act requiring upgrading of the operations to small-scale mines in a matter of six years. Yet small-scale also specifically bans the use of explosives, mercury and mechanization. Any financial commitment by Western investors is at the risk of ethical accusations about supporting illegal enterprises; and

coupled with the financial risks highlighted in the previous subsection; these factors militate against the likelihood of legal investment by partners to ASMOs.

5.1.3 Valerio and fair trade in jewellery

Having examined the trading part of fair trade in the situation, the chapter turns to study fairness in the production of artisanal gold.

Recalling his autobiography, High Street jewelers like Valerio have, in effect, given their proxies to EFT organisations to certify the producers of the raw materials as reaching certain standards of ethical production. In turn, these NGOs seek to give their proxy to groups of miners collaborating in the form of ASMOs to ensure such ethical production, as noted below. As a Christian, Valerio explained his ordinary theologies of God, justice and economics during a personal interview:

As I began work, towards this thing that became known as fair trade gold and fair trade jewellery, I ... understood God as just. So to me justice was not an external set of rules or laws that can define what is right and wrong. To me it was a far more ... visceral awakening ... God, by definition is a morally just being, and God is creator so there is a latent deposit in creation of the morality of God. ... (The miners) don't need economic justice for the sake of economic justice; what is required is an economically just process to bring prosperity to the land and the people. As the covenant of God is to prosper the land and the people, so the pursuit of economic justice is the means to the end, not the end in and of itself. (Valerio 2018)

The written and verbal quotes from Valerio show his desire to bring prosperity to the miners of precious metals and stones which are supplied to the jewellery sector. In this transcript, he is clear regarding the ends (prosperity for the land and people) and the means (an economically just process) under a morally just God towards this end.

The justification for EFT interventions in this sector has now been explained by Valerio, as an early campaigner for justice in the jewellery sector, and the next paragraphs investigate their intentions, means, and ends, in more depth. In spite of his personal desire not to reduce justice to external sets of rules or laws, such measures and their proposed global implementation have become the EFTO means towards transforming the economics of artisanal gold.

5.1.3.1 Responsible Artisanal Mining and EFT Organisations.

In 2013, the Foundation officially entered the sector with the publication of their Standard, clearly stating their intentions ‘of empowering producers and local communities through trade and delivering economic, social and environmental transformation and restoration ...if both ASMOs and traders share responsibility and partner together towards sustainable and fair mining practices’ (Fairtrade Foundation 2013:3,4). The traders mentioned will buy the gold produced by an ASMO for a price which ‘must be at least ninety-five per cent of the LBMA ... fix for the pure content’ (2013:65) and at first sight this compares well with the present 70 per cent mentioned in the vignette. However, this price is only offered to the ASMO after certification (2013:65), once they ‘fulfil all core requirements and reach the minimum score on the development requirements as defined by the certification body’ (2013:5). By way of explanation, the Fairtrade Labelling Organizations International as the ‘certification body develops technical compliance criteria to be used during audits and for making certification decisions. These compliance criteria follow the wording and objectives of the requirements in this document’ (Fairtrade Foundation 2013:5). It is therefore necessary to investigate these requirements for responsible artisanal mining which must be met before fair trading can begin.

The Foundation’s eight ‘Principles for responsible ASM’ are listed as ‘legality, human rights, decent work, quality of life and sustainable human development, environmental stewardship, gender equality, multicultural nature and armed conflicts’ (Fairtrade Foundation 2013:73–74). Within these responsibilities, they set out 168 requirements as either ‘core’ which be must met by the ASMO before certification or ‘developmental’ which are to be met usually within three years thereafter. A close examination of these standards indicates a mix of national and international laws, human rights and ethical expectations of High Street Jewellery customers which are

reproduced as the principles of responsible, sustainable and fair mining practices. In the Standard, they become policies for ASMOs in the South to put into practice and be measured against for certification, prior to receiving economic benefits from gold traders or jewellery manufacturers in the West. The large number of these requirements which apply to ASMOs is indicative of the perceived wide ranging normative⁵ problems perceived within the sector.

A second document that deals with impacts arising from artisanal gold mining has been published by The Impact Facility, initially a partner organisation to the Foundation. The Facility (their own short title which is used henceforth) published their '*ESG Performance Criteria & Guidance*' (the Criteria) in 2018, and their abbreviation is explained as the 'environmental, social and governance (ESG) aspects of the organisations that receive our support' (Impact Facility 2018:4). The Facility aims all their criteria at 'The Organisation' which, 'refers to the rural, small-scale enterprises that stand to benefit from The Facility's service offering'. Yet they define artisanal mining as 'A form of low mechanised mining carried out by single, or groups of miners to yield a subsistence living' (Impact Facility 2018:8). There is a gap between their definition of artisanal mining and the following forty five pages of criteria, every one of which is to be met by organised rural small-scale enterprises, not quite a synonym for an ASMO but still an organisation. The document proceeds to spell out 150 criteria, and 'to ensure the reputation and integrity of the Facility's donors, investors and supporters...(these) ESG aspects must be carefully monitored and actively managed' (2018:4). This extension is not just to prescribe responsible mining but because, 'poor ESG performance can present a reputation, operational and financial risk to The Facility' (2018:4). Their lengthy list of criteria is again evidence of the systemic nature

⁵ Here again the word is used in its meaning of 'a principle of correctness that is binding upon the members of a group' (Allen 2007f:871) where the ASMO is expected to be bound by such policies in the pursuit of certification.

of the problems in artisanal mining. The language used in these sentences (risks to reputation and integrity) is clearly ethical and is evidence of the normative nature to development adopted by the Facility.

This look at the two documents shows the number of ethical matters in responsible mining that must be dealt with before certification; the ends of fair trading (increased revenue from gold) can only be gained when the means of fair production are met. The documents list the social, economic, environmental and governance matters which must be dealt with by the ASMO before certification, i.e. as a means to fair trading their gold. The enthusiasm of miners such as Aguttu to cut out the cheating middleman and see fairer prices paid to women miners has now to be channelled, not in simply trading their gold through reputable buyers, but in satisfying someone else's wide-ranging vision of 'delivering economic, social and environmental transformation and restoration' through 'sustainable and fair mining practices' (Fairtrade Foundation 2013:4) implemented by organised groups of miners. Eleanor Fisher and John Childs welcome the 'bringing (of) relational values and civic action' through such EFT initiatives, but fear the '685,000 non-licensed artisanal miners' in Tanzania cannot be helped, only licensed 'claim owners appear eligible' (2014:143); so unless these miners get organised, then they will not be helped.

Getting organised is the only the first step in addressing problems in the sector by ASMOs, in order to satisfy the ethical requirements of High Street Jewellers and their customers, who have given their proxy, as it were, to EFT Organisations to verify responsible mining in fair trading. These international NGOs are however entirely dependent on the local ASMOs and while the strength of MICA has already been examined above, the issue now is to examine the strength of other miners' organisations and networks in East Africa.

5.1.3.2 The present situation regarding ASMOs in East Africa

The next step in understanding the ends and means of fair trading within economic justice is to bring into the critical conversation what has been said recently about the establishing and strengthening of ‘membership-based artisanal and small-scale mining organizations’ (Fairtrade Foundation 2013:3). Joshua Read (a former consultant with a support organisation for the Foundation) noted that the only Fairtrade certified ASMO in Uganda, the Syanyonja Artisanal Miners Association⁶ (SAMA) who were given a GK concentrator in 2016, is having organizational problems:

SAMA got itself into a bit of a pickle. They had lots of internal struggles and since that time put their mine on hold and they are facing de-certification from Fairtrade as well as having changed their leadership structure quite significantly. That’s all to do with the decisions that were made around that time by the existing leadership; decisions about how to use their finances and where to invest their time ... they don’t have a single strong leadership and they can’t afford the payments for Fairtrade certification. Their production from their mine is so low at the moment they can’t afford to do anything and they haven’t got their act together to really make the most of that free plant which was given to them. (Read 2019b:2)

Read believes the lack of organizational resilience has impeded their development on many fronts. Tina Mwashwa (also a consultant with a support organisation for the Foundation) noted similar problems with associations and networks in Tanzania.

Most of them are voluntary but if someone has made money available to form it and keep it going and you have elections and a chairman and a secretary and everybody in place, secondly when nothing flows in it slowly starts dying and the members themselves start having different interests in whatever direction they are going. ...In Tanzania we have the Women Miner’s Association it keeps dying and coming up, when I enquire what happened it is personal interest. The Chairperson has got her own interest, the Secretary has got her own interest the members have their interests and when for example the World Bank puts in money they are all running to get a share. They forget their objectives, they forget why they called it an association and the outsiders are wondering this association which was supposed to support them ends up not supporting them ... these networks need oneness and sincerity in joining. They shouldn’t join just because they hear there is an organization which has put in money. ... there is that love for people to benefit. (Mwashwa 2015)

These concerns about the rise and fall of miners’ organisations for selfish reasons raised by Mwashwa are clearly normative, and the problems faced in the development of fair trading in artisanal gold include the local ASMOs, even though they are expected to deliver economic, social and environmental transformation and restoration (Fairtrade Foundation 2013:4). Secondly, as mentioned above, these miners’ organisations or

⁶ <http://www.fairgold.org/producers/> accessed January 2019.

community enterprises are expected to ‘ensure the reputation and integrity of ...donors, investors and supporters’ (Impact Facility 2018:4). Although the performance of most artisanal mining enterprises remains low, this supposedly represents the greatest opportunity for positive change (Impact Facility 2018:4). There is both an acknowledgement of, and an encouragement for, working alongside less than fully functional groups of miners, as typified in these examples.

5.1.3.3 Assessing the impasse in Fairtrade approaches

The third impasse is between the quantity and high level of the Foundation’s standards (and the Facility’s criteria) on the one hand; and the low performance of ASMOs, on the other. The approach by these EFT organisations overloads ethical expectations of responsible artisanal mining, assuming the capability of miners’ organisations to fulfil these obligations. Their own definitions of artisanal mining are glossed over in their approach to realising these ends of economic improvements.

In spite of Valerio’s hope for justice not to be reduced to auditable clauses within lengthy documents, this has happened, and where East Africa is concerned, Fairtrade has proved an unsustainable approach to improving the economics within miners’ livelihoods.

5.1.4 Summarising the present economic situation

Section 5.1 has followed Stage One of Swinton’s and Mowat’s model, describing the situation through the perspectives of those involved in attempting to bring the ends and means of fair trading to fruition, including the efforts of Valerio and MICA. The ends (improved revenues) and the means (certifiable conformance by ASMOs) of Fairtrade are beyond the present capacity of actors and intervenors in the situation. Improved revenues cannot be facilitated without the miners conforming to pre-determined EFTO standards and criteria, or State laws.

This section has also shown what EFT organisations mean by the fairness part of fair trading, and how they intend to attain and sustain such responsible mining practices. For such fair trading to ameliorate what they perceive as unfair practices in artisanal mining, gold must in reality be traded; and the first two subsections showed impasses to be overcome in the production or accumulation of trade-able quantities for export. The third subsection contrasted the impasse between the expectations of EFT organisations and the reality of ASMOs in the situation (which include MICA's shortcomings).

The research has found that the present state of MICA in spite of its founding objective to trade gold with customers in the United Kingdom is unable to offer alternatives to the ongoing gold sales, as observed. Financial, production, legal, and organisational, impasses in the situation have been demonstrated with respect to fair trade. Neither direct dealing, nor investment through a possible partnership provided ways forward for improving economic livelihoods. This triple impasse is a disappointment, especially for me as a *pro bono* agent for the Foundation, who expected to return in 2014, in spite of the setbacks in 2011 and 2012, to assist with MICA's preparations for official Fairtrade of their gold.

The findings agree with Alan Morris that, 'social reality is messy' (2015:128). The evidence is, in spite of the intentions to reward miners fairly, that the ends and means of Fairtrade are not going to be achieved without struggles in East Africa.

5.2 Cultural/ contextual Analysis

Following Stage Two of the practical theology model, the study turns to analyse the three impasses in the situation, which have been described above. The chapter includes analyses by the miners and by the academic research community, further investigating the dimension of economic justice. The economic benefits of artisanal mining are brought to the conversation, adding weight to the necessity of this livelihood and to the need for ongoing research; followed by a brief investigation into the history, purpose, and limits, to economic justice.

5.2.1 Miners' own analyses

There were some ordinary theologies and ethics expressed by the miners in Busia, Uganda with respect to the interventions of EFT organisations in their economic livelihoods. Aguttu was satisfied that interventions would lead to less exploitation and cheating:

I think one thing I am looking at is the difference in what we were and now with fair trade in our midst is an assured market for our gold. Alongside assured markets I am also seeing good price for our gold. The other thing I am seeing is the expulsion of the middleman who I would call a cheat, so no more cheats in gold mining industry. So many times the middlemen have paid us low prices, they have dictated on what to pay us, and I am not seeing this anymore when fair trade is in our midst. (Aguttu 2017b)

And on another occasion:

I am actually also happy because the point we have reached is like we have reached a level where we are putting the last nail in the coffin for us to see our gold move through this whole process and there we shall be able to export it with that godly hat. Without cheating, without mistreating anybody, and all that bit. (Aguttu 2017a)

Aguttu sees no divide between fair trading of gold and wearing a 'godly hat' which goes further than her welcome of the system especially for woman miners. 'I would love and like to see their lives changed ... women miners should not be cheated any more. I look forward to seeing these women export their gold' (Aguttu 2017a). Bearing in mind the real concerns expressed during her monologue in the last chapter about the possible misuse of extra money in the local community she sees, not just the improved revenues,

but how they are spent, as important under God. She regards the ethical investment of these financial rewards and ‘a godly heart’ as inseparable. In a conversation between Kwemboi, Kitabire and Aguttu during the first focus group, they worried over these future increased incomes:

George: And when you do get this money from gold you have to use it as a Christian.

Josephine: In a Christian way, support God’s ministries, support the orphans.

Emily: Be faithful.

George: Be faithful even as a point of fair trade, do not use this money for rebelism (*sic*). Rebel activity can harm very many people, children will die, raping women, and what have you. It is just because we have got the money from gold as if it is better than God but we must use it for useful things. (Kitabire, Aguttu, et al. 2017)

They appeared to express real hopes and real concerns over the promise of increased money from fair trade and once again the mix of God, gold (or money) and community comes through as an integrated measure of their situation. Not repeated here, but from their responses recorded in the previous chapter, the fear from not using money in a faithful way is the removal by God of gold, as an economic blessing to the community, thus it is not just a quest for commutative justice but also its consequences. These concerns over choices in the disposal of this extra income reinforce those raised in the earlier chapter about social justice under God.

The miners’ analyses point to their desire to see the end of cheating by middlemen, to wearing ‘godly hats’ i.e. more faithful ways of selling gold that will benefit their communities; and these support the original intentions of MICA as expressed in the previous section. Both groups of miners, in two separate countries, reinforce the motivation towards an intervention that will improve their livelihoods, both financially and ethically, the question is how economic justice may be approached.

5.2.2 Analysing economic transformation

This subsection addresses how academic researchers view the economics of artisanal mining livelihoods; how ethicists view commutative justice in the literature; and whether they support or dissuade interventions towards economic justice. In general

terms, Hartropp describes economic life as ‘the control and use of material resources (including agricultural resources) by human beings, and to the human relationships which involve such material resources’ (2007:7 p46). This is an adequate description to cover the livelihoods arising from artisanal gold resources, the subject of this thesis.

5.2.2.1 Economic benefits of artisanal mining

The academic research community believes there are three main economic benefits from artisanal mining which are, firstly, the possibility to exploit mineral resources that are otherwise uneconomical to recover. Secondly, the creation of job opportunities (economic livelihoods) which leads, thirdly, to the creation of revenues for those involved, all three being ‘weighty factors in a poor economy’ (Tarras-Wahlberg et al. 2003:713). John Andrew claims it to be ‘primarily a poverty-related activity, usually found in remote rural areas of developing countries, where there are few employment opportunities and where education levels are extremely low’ (2003:117). Artisanal mining is an ‘essential activity’ in many developing countries ‘particularly in regions where economic alternatives are critically limited’ (Hinton et al. 2003:161). Based on the foregoing, Hilson strongly argues, ‘without a proper understanding of *why* people mine on a small scale ...(it) could easily be misconstrued ...that the industry provides economic opportunity, when, in fact, it mainly provides *economic relief*⁷ (2003a:111). Yet, there is a positive extension to this economic perspective by Edmund Bugnosen who adds ‘the activity is mainly poverty driven; hence, it is people-initiated and a direct poverty alleviation measure for the country as a whole, with little cost, and limited intervention, on the part of the government’ (2003:18). Olle Ostensson concurs, going beyond poverty alleviation: ‘Small-scale mining, even at the level of artisanal activities, also makes an important contribution to employment and local wealth creation (1997:25). In summary the sector is important ‘as an engine of employment, its ability

⁷ Italics in the original.

to fuel local development, and how, as a “last resort”, it prevents millions from slipping into a situation of desperate impoverishment’ (Clifford 2012:12). Again Hilson argues that it ‘is more than simply an industry with the potential to contribute positively to foreign exchange earnings and employment; it is a way of life’ (2003b:xxiii). As repeated from the literature review, artisanal gold mining can be described as a people-initiated, self-reliant labour intensive source of livelihood for individuals or collectives with limited capital investment using rudimentary techniques for quick cash returns as a form of local wealth creation. This description (albeit assembled by me) was not contradicted or altered after observing the miners in the gold fields of East Africa over many months.

According to the United Nations, in 2012 artisanal gold mining was a livelihood for 15 million miners, including approximately 3 million women and children, who made up ninety percent of the gold mining workforce worldwide. It was spread over seventy countries and produced around 400 tonnes, which is about fifteen percent of the world’s new gold supply (UNEP 2012:68). There are potentially 100 million people living in their communities (UNEP Chemicals and Health Branch 2019:57), economically supported in some way by artisanal gold mining.

The economic importance of artisanal gold mining as livelihood, described and quantified by the global research community, implies the significance of economic justice, including the offer of improved revenues from the fair trading of artisanal gold through EFT organisations. Flourishing for artisanal gold miners in East Africa appears to be dependent on three integrated components: legally held property rights without which there can be no business investment; appropriate investment to reach exportable quantities of gold; and commutative justice to reward miners for responsible mining practices. Yet none of these can occur before miners are formally organised and

concerns for their ability to get organised enough to further benefit economically, are raised by academic researchers, e.g. those by Esther Kazilimani in Mozambique:

However, as is clear from the surveys and interviews undertaken in this study, artisanal mining in Mozambique is almost completely disorganized beyond the small production unit. Accordingly, for significant change to take place, it will be necessary for some organization to take a lead role with respect to information and communication.(Kazilimani et al. 2003:264)

Both the primary and secondary evidence brought to the critical conversation shows that organised groups of artisanal miners in East Africa, whether they are co-operatives, ASMOs, associations or networks are presently not sustainable. The chapter now briefly analyses some intentions and ends of economic justice, through global and societal perspectives of theorists introduced to the critical conversation.

5.2.2.2 Selected theories of economic justice

Regarding economic justice in Africa ‘the subject is diverse; it addresses the ...basic areas of democracy, personal security, education, health, environment, and agriculture’ (Shepherd & Shonko 1994:xi) to which artisanal mining is now added. Predating Valerio’s awakening to the perceived economic injustices against suppliers of the raw materials used in the jewellery sector, the political theorist C.B. Macpherson noted these matters are not recent, they date back to Aristotle. Macpherson writes that the concept of economic justice, as distinct from the general notion of justice, arose when merchants and markets achieved a relative autonomy or independence from the State. The concept came about once economic relations were separable from the prevailing social and political relations in general, when the inroads of money and markets were dissolving an older way of life (1985:2–6). These considerations of economics and prosperity developed into commutative and distributive justice (Macpherson 1985:6). For Hartropp, commutative justice is about justice in the acts of ‘economic exchanges between individuals and/or parties. Thus it concerns, broadly, justice in production and exchange’ (2007:159). For Valerio, as noted earlier, economic justice was commutative

justice i.e. fair trading (2013:84); and for the EFTOs, justice in production practices is important enough for it to warrant auditing, prior to certification.

From the literature reviewed, economic justice is concerned with inequalities – the fears of inequalities in the artisanal gold mining sector were observed, raised and acted upon by e.g. Valerio and MICA. They further narrowed to commutative justice and a sense of fairness in exchange which continues to influence both EFT organisations and artisanal gold miners. For Aristotle commutative justice is concerned with ‘how much of the material means of life each exchanger got in return for (their) produce or labour.’ A ‘just price’ yielded to the commodity producer ‘a return proportionate to the status customarily enjoyed by a person... (with this) occupation or skill (and these) ...were to be socially determined, not left to the determination of the market’ (Macpherson 1985:6).

Furthermore as Hartropp points out, work, with its hardships, pain and toil is basic to economic activity (2007:51). These labours along with requisite skills of the producer (such as Aristotle’s examples of the farmer, the shoemaker and the housebuilder) were to be considered in a just exchange. However, the basis for valuing the gold produced is simply based on the LBMA fix, even by Fair-trade organisations. Neither are the capital assets which people draw on to build their livelihoods (MMSD Group 2002:75) valued in this situation. Sachs and Santarius observed:

that the producers are often the weakest link in the chain ... because their “capital” - whether land, crop rotation, climate or physical strength cannot be easily invested elsewhere. Thus in global trade the payment to the producer is seen as the ‘soft’ element in the product price, whereas the later stages of commerce, design and sales take the lion’s share of the difference between the producer’s and the consumer’s price. (2007b:143)

Regarding those with the capital finance to invest in purchasing from the producers, on the other side of this trade equation, ‘the unconstrained and sole pursuit of the interests of the owners of capital will tend to produce at least some actions which are incompatible with commutative justice’ (Hartropp 2007:170). Matters of who owns the purchasing capital and whether they are just or unjust (in Aristotelian terms) regarding

the exchange of artisanal gold for ‘quick cash’ (Kinabo 2003b:314) remain topical to the situation, and focal to the ends of economic justice.

The power to define livelihood resources, minerals and mining remains strongly with national Governments to determine (through licensing), who can unearth minerals within a State. Miners, on paper, have some power over the development of their resources, irrespective of the legal rights to property. Unfortunately, the capital requirements of just resource development (as noted by Odhiambo), to take their present impecunious livelihood practices beyond the legal or academic definitions of artisanal mining, as noted throughout the thesis, are unlikely to be met. Without a legal foundation such investment as a means of just resource development precludes the ends of economic justice, which are at least, improved revenues and transparent transactions between artisanal gold producers and High Street jewellery consumers.

5.2.3 Summarising analyses of resource justice

Economic justice has been shown to be an integral aspect of just resource development even if not directly addressed by all the actors and agencies involved in the situation.

In spite of Sachs and Santarius’ desire to see distribution of power as a part of resource justice, artisanal miners in East Africa remain disempowered, incapacitated by their national legislative frameworks, by a lack of capital finance and by their inability to raise enough gold for export in order to benefit from improved revenues through fair trading. This section indicated that issues of the advanced market economy which faced Aristotle are still informing Western interventions to promote economic justice through some form of fair trading. Macpherson proposed that principles of justice are ‘deduced from natural law (or divine law) or from a supposed social nature of man’ (1985:3); and the social source, a sense of injustice, has been discussed by Sachs and Santarius (2007b:119). The latter source, divine law, is now brought to the conversation.

5.3 Theological Reflection

A searching question to do with economic development asks, ‘Finally, how does this development serve God and his purposes? This question is all-encompassing. Responsibility to God should force even the most influential and powerful economic developers to examine the justice and real benefits of their projects’ (deVries 1995:330). So (within Swinton’s and Mowat’s Stage Three), theologies pertaining to economic development based on the just character of God (as reviewed in Chapter Two) are now brought to interact with the situation. Regarding commutative justice, Section 5.1 elaborated on impasses in implementing proposed economic alternatives to gold sales, such as the *vignette* describes. In terms of exportable quantities – there is insufficient production; there is no working capital to accumulate gold; ASMOs are too weak to engage in trading. In terms of fairness – there are legal impediments in the situation, in conforming to a system of production preventing certification, although strong ASMOs could be formalised as per Mwai’s suggestion.

Yet, Christian economist A. B. Cramp is in broad agreement with the intentions of the fair trade movement:

Mainstream Judaeo – Christian doctrine ... has called for ... trading relationships (to) be properly governed by rules of morality and kindness. ... based on community values, not (on) naked self-interest. ... trade should ... protect the weak and ignorant, who often receive harsh treatment from free-market forces. (1995:117)

Practical and theoretical considerations have been examined; now theologies of economic justice pertaining to trading relationships, fair trade, or commutative justice, require deeper investigation as follows.

5.3.1 In relation to God’s character

Chapter Two highlighted certain Biblical values in relation to the Christian God as a God of justice, mainly with reference to the Old Testament. However, the New Testament is saturated with similar teaching; Jim Wallis claims that, ‘One of every

sixteen verses in the New Testament is about the poor or the subject of money (Mammon, as the gospels call it)' (2005:212). According to Glen Stassen and David Gushee:

in a context characterized by extraordinary economic exploitation in Jesus' own day and long economic depression in Matthew's time, Jesus was teaching about the kind of compassionate and merciful justice that delivers the poor from poverty and restores them into community. This is a justice teaching, not a psychological teaching. And it is a discipleship teaching, a summons to serve God's compassionate reign through acts of justice-advancing compassion toward the most economically vulnerable and oppressed. (2003:413)

Delivering the poor from poverty is not to be left to interventions by fair trade organisations, this is a teaching to Jesus' disciples; and when we see Jesus' concern for an end to unjust economic structures, we 'cannot help but think that if he was that committed to justice in his context, we are required to be just as concerned about justice in our own' (Stassen & Gushee 2003:365). If as George Ladd argues, 'the primary demand of Jesus is for righteous character' then 'righteousness of the heart, is actually attainable, qualitatively if not quantitatively. In its fullness it awaits the coming of the eschatological Kingdom; but in its essence it can be realized here and now, in this age' (1975:130). Thus 'ethics, like the Kingdom itself, stand in the tension between present realization and future eschatological perfection' (1975:129). But Jesus goes further, 'the law of love subsumes all the ethical teaching of the Old Testament (Mt. 22:40). This law of love is original with Jesus, and is the summation of all his ethical teaching' (1975:133) and it 'is clear that such love is not an emotion but Christian concern in action' (Ladd 1975:524). These theologies invoke biblical values in relation to God's character e.g. justice, righteousness, and love; nuancing Macpherson's view of justice as involving 'some ethical principles ...and value laden concepts' (1985:2).

The next subsection investigates economic justice as a theological concern, further seeking how to approach its development through Biblical revelation.

5.3.2 A brief theology of economic justice

Recalling Macpherson's proposal that ethical principles behind economic justice may be deduced from divine law (1985:3), Hartropp considers both the Old and New Testaments of the Christian Bible as sources for principles of justice in economic life (2007). He notes various bible passages, among others, which deal with economic life and justice in terms of wages (Lv. 19:13); prices (Lv. 25:14-17); property (Ezk. 46:18); robbery (Lv.19:13) and so on (2007:99). From such analyses he conceives a biblical conception of economic justice, extending his initial definition of justice (noted in Chapter Two) to cover four main elements:

First, justice means appropriate treatment, according to the norms commanded by God for each particular case – norms built into the moral order of creation. Secondly, God's justice, in terms of economic life, involves justice to the needy. Thirdly, economic justice is not only allocational, but also concerns the quality of relationships. Fourthly, justice in the allocation of resources means that everyone participates in God's blessing. (2007:102).

Each element contains an action or verb: appropriate treatment, to the needy, quality of relationships, allocated resources, and participation; allowing these elements to be interpreted (not as the intentions or ends) but as the means of economic justice. As noted in the thesis Introduction, these means are not devalued compared to the intentions of justice, nor to the ends of justice, for the situation. These actions (or means) are underlain by compelling values, which induce godly approaches to be purposed here, as well as in both the intentions and ends of economic justice, i.e. the intentions are to harmonise with the characteristics of a just God, as described in Chapter Two. There are no differences in status between the intentions, means and ends of justice, but following Cowen and Shenton, they represent different modes in its development, not forgetting that values implicitly guide all three modes (1996:445).

Evidence from Chapter Four indicates the local communities are concerned with these elements – Wright concurs with them and with Hartropp:

Biblical justice, however, goes beyond a calculus of rights and deserts. Because it is fundamentally relational it always blends into *compassion* for those who are vulnerable. So, in biblical economics, wealth that God has enabled us to produce must always be held and used with a compassionate heart and hand. (2004:167)

Such compassion for the vulnerable is shown by the community; local Christians have an awareness of the norms of God; they are concerned with relationships before (and with) God; and all are to participate in gold wealth.

Hartropp admits there will be practical difficulties in applying the Scriptural teaching and principles particularly with regards to justice in exchange because ‘economic agents have only a limited degree of choice as regards commutative justice’ (2007:160). Hartropp returns to his relational position where ‘emphasizing the importance of relationships in line with God-given norms provides a much firmer foundation’ (2007:163). He believes the relational framework for economic justice goes well beyond legal claims and fairness yet still requires reciprocal responsibilities and obligations for all parties (2007:70). In other words, ‘exploitative behaviour is disallowed’ (2007:161) when ‘founded on the biblical teaching that there are norms of fairness and justice, and of love, trust and faithfulness, in economic relationships’ (2007:164). He cautions, because justice in economic life involves the decisions of individuals, firms and communities, in a wide range of different situations with many interconnections, moral principles should be treated as a ‘framework’ not as ‘isolated norms’ (2007:39). He emphasizes that the Biblical material is a package of principles which are neither independent of one another nor are they a blueprint (2007:39). Wallis agrees:

The Bible doesn't propose any blueprint for an economic system, but rather insists that all human economic arrangements be subject to the demands of God's justice, that great gaps be avoided or rectified, and that the poor are not left behind. (2005:273–4)

Referring to historical Israel, Wright opines: ‘By seeing how *they* addressed, within *their* cultural and historical context, problems and issues common to humanity in principle or practice, we are helped to address (if not always to solve) the ethical challenges *we* face in our different contexts’ (2004:69). John Goldingay, as quoted in Hartropp (2007:37–8), and Stuart Cook (2008) propose a similar approach of interpreting biblical passages as principles or practices which can be applied to life's concerns, including economic justice.

5.3.3 Economic justice and theologies of discipleship

The above subsection outlines the means towards those components of economic justice which were described in the previous section, yet the situation shows action is required on the part of any who seek to practice economic justice. For example, ‘If Christian ethics is following Jesus, it must involve a clear-eyed analysis and finally repudiation of an economic ethos that ratifies the “deceitfulness of wealth” and makes Mammon the national idol’ (Stassen & Gushee 2003:426). They continue, ‘Christians need to learn practices of economic spending, sharing and empowerment that lead the way ... for a faithful embodiment among disciples of the vision of economic justice that Jesus teaches’ (Stassen & Gushee 2003:422). In a discussion regarding ethics, the rich and the poor, P.H. Davids notes, ““poor” always carries with it a sense ...of oppression and helplessness ... A person who was comfortable and secure would not be termed “poor.” The disciples had left their relative security to identify with the insecurity of Jesus’ (1992:706). Yet Davids goes on:

None of these considerations will remove the aspect of eschatology from Jesus' teaching on rich and poor. But they will show how eschatology (and, in Paul and others, the gift of the Spirit as the down payment on the eschatological future) was related to ethics in the early Christian tradition. We will then be better able to interpret that tradition for today. (1992:709)

The reliance on this gift of the Spirit for guidance in interpreting New Testament teaching for today’s situation returns to the inseparable trio of critical holism, intelligent love and development wisdom, as divinely sourced tools for just economic development.

Regarding the internationally published Standards and Criteria and the need for ASMOs to conform through certification ensures, in part the already mentioned reputation and integrity of donors, investors and supporters (Impact Facility 2018:4). Yet, Filipino theologian Melba Maggay observes, the ‘tension between respecting local norms and measures of performance on one hand, and accountability in a way that makes sense to donors on the other hand, needs to be negotiated with a great deal of

cultural sensitivity’ (2008:131). In spite of this tension, there remains the call above for some organisation to work alongside ASMOs.

This segues into ‘the ministry of justice advocacy’ (Haugen 2002:199) where there is a need to ‘make it clear to the Christian community that the work of advocacy is desperately needed, thoroughly biblical and eminently doable’ (2002:188). The economic impasses disclosed in this chapter cast doubt on the eminently doable claim, nevertheless the ‘larger structural injustice that needs to be addressed through issue-based advocacy’ (2002:199) is the miners’ desire to escape the commutative injustices they presently perceive when exchanging their gold for cash to local ‘cheats’ (Aguttu 2017b). The miners acknowledge the price for their gold is set internationally, which is not in contention, their hopes are based on alternative buyers for their gold and achieving the improved revenues promised through fairer trade.

5.3.4 Summarising selected theologies

The theological ruminations within 5.3 have elaborated on the intentions of a just God, and the just means of, but not the ends of, economic justice. The ‘oughts’ reflected upon here have been based on theological and biblical literature, and provide insight into the underlying values within the intentions and means of economic justice. They are in marked contrast to the ‘oughts’ of the secular literature studied in 5.2, where the economics of their livelihood is justification for the existence of artisanal mining. The issue then, is to reward the hard work of miners through improved revenues resulting from commutative justice or fair trade, lessening the injustices of poverty. It is recalled that justice is believed to arise out of senses of injustice, as opposed to arising from the character and purposes of the Christian God. The broad intentions here, in agreement with the miners interviewed, are to please God by walking in his ‘ways’ (Psalm 81:13 NASB), which have been generally outlined in this section.

In terms of Hartropp's means, firstly, justice as treating each particular case according to the norms of God built into the moral order of creation. Evidence from Section One of this chapter is that Valerio uses a similar language: 'there is a latent deposit in creation of the morality of God' (2018); also he treated MICA appropriately, to the point of personal financial loss. Secondly, God's justice includes the needy. Certainly, EFT intervenors in the situation believe in the same second element, seeing economic justice as justice for the needy. Thirdly, justice concerns the quality of relationships. This was a hallmark of Valerio and MICA, but institutionally, EFT organisations are less committed, preferring to financially reward ASMOs after measuring their responsible mining policies and practices through more remote bureaucratic procedures such as auditing and certification. Fourthly, justice means everyone participates in God's blessing; whereas the compassion of EFT organisations is more pragmatic, it is to the producers within a recognised enterprise or to the community through the development of social facilities.

These theological reflections have indicated that the Christian God is concerned with the promotion of economic flourishing, as it may be applied towards shalom within artisanal gold mining livelihoods. These theologies (ordinary or Western text-based) give further substance to the need for critical holism, intelligent love and development wisdom that make up the means of a just approach, reviewed in Chapter Two.

The ends are (following Hartropp) to be specific for this particular situation; some of these are now elaborated.

5.4 Formulating Revised Practices

Swinton and Mowat maintain that 'Practical Theology is certainly a reflective discipline, but above all else it is a theology of action' (2016:261) and it is to the consideration of more faithful practices towards promoting economic justice in the situation that this section now turns. The first two sections have demonstrated numerous challenges within the dimension of economic justice such as the miners' property rights, attracting just investment and improved livelihood incomes from fair trading of gold. While the challenge of property rights will require justice advocacy in the halls of East African Governments, certain actions can be provisionally implemented in the situation to increase production and improve trading revenues.

Wallis, who has an entire section of his book titled 'Fair Trade', believes that 'more equitable trade practices are also crucial for seriously reducing poverty' (2005:278). He continues:

Along with advocacy for fair trade policies, we all have the opportunity to *buy* fair trade products through a growing network of nonprofit organizations that deal directly with producers, eliminating the middlemen and paying a fair, above-market price. Such fair trade products now being marketed in the United States, the United Kingdom, and throughout the developed world include coffee, tea, cocoa, chocolate, clothing, and crafts. (2005:281)

While his emphasis is on the act of buying fairly traded goods by consumers, this thesis is concerned with the mining and trading of gold by producers to satisfy this aspiration of more equity in economic practices. An approach to improved mining practices was suggested by Onyango, who was adamant:

First of all I would say they the people the first problem they are experiencing is that they don't have the right tools. Secondly they need something to do with capacity building. Need to be sermonized on mining processes. They need to be taught on the best methods of working in the gold mines. These people do not have technology of digging these holes. (2015)

Referring to the tools, Opiyo maintained, 'work starts underground and we need water pumps, compressors, tarimbos⁸, tools to extract ore that can (then) reach the mercury free process. So under the fair trade framework, I think that bit is outside their

⁸ Tarimbo – rock drill (Asembo 2015).

suggestions’ (2015). He noted that finance to acquire production equipment was not accessible through the Foundation, yet the need for it remains, as 5.1 has shown. These suggestions, and the experiences learned from Valerio’s three interventions, have informed the following initiatives by Joshua Read (2019a).

The previous chapter noted the initial establishment of a ‘Hub’ i.e. a location in Masara village where miners may relax in an environment which is different from the many bars, brothels and restaurants that are available. However, it is planned that this location will also provide practical help for miners in a variety of ways such as a store that will sell mining and ore processing technology e.g. better quality sluicing blankets; personal protective equipment; and other consumables e.g. rechargeable headlamps. The last two are based on Ochieng’s wishes for ‘something like gloves, overalls, boots and helmet. And even the spotlight we are using now is not a good spotlight. It can be broken when you are inside the hole ... So those are the problems’ (2015). Miners’ behaviour will change advantageously, but its benefits are weighed before adoption.

Other capital items will be for sale, lease or pay-per-use, including more efficient water pumps, motorised winches, the aforementioned GoldKacha and other concentrators, and shaking tables. For example Asembo observed, ‘if you want to go faster, you have to buy two pumps so that if one breaks, another one is there to continue the process. That is my experience’ (2015). Perhaps the second pump could be hired from the Hub when required quickly? Regarding the pay-per-use equipment, the intention is to have the items small enough to fit onto trailers that can be towed behind motorcycles. The Hub will be therefore be the base for Christian mining technicians, such as Jim Asembo (pictured in Appendix Two, Section Eight), who will provide practical assistance on mining sites, travelling there on small motorcycles, with appropriate equipment for hire, and knowledge of Mining God’s Way.

Secondly, following Onyango's suggestions for capacity building, a shaft on the mining site owned by Asembo has been dedicated to teaching the principles of Mining God's Way (also pictured in the Brochure). The miners are waiting for me to prepare notes to guide them in these principles and to record lectures that can be accessed online for non-reading based cultures, with both translated at least into Spanish, once they are made available.

Thirdly, Read is working towards an online retail business that will sell artisanal gold, either auctioning refined gold to ethical jewellers or selling men's wedding rings; among other fair trade consumables.

Thus actions are being taken towards the promotion of economic justice, i.e. investing into the Hub as a pilot project providing goods and services as a stand-alone business, in addition to being a safe haven for miners to relax or venue for pastoral help. The mobile assistance to miners in terms of production, training, and ultimately fairer trading of their gold can be trialled independently of, and therefore without creating expectations on the part of, local ASMOs. This location for investment is preferred to partnering with ASMOs whose tenure over their mines lacks stability; and advocating for such economic justice with respect to miners' mineral properties is yet to be initiated.

Chapter Conclusion

This chapter has examined certain intentions, means and ends of economic justice as they apply to the situation; from the perspective of how it can inform a practical application, however tentative, which is an approach to just resource development, and contribute to an understanding of mineral resource justice.

In Section 5.1 the present economic situation was described, including the intentions of MICA, which were fairer trading, hence Opiyo's contact with Valerio in 2011. The means they were hoping for, and continued to hold for years afterwards, were through relationships with UK-based jewelers, not through certification; and the end they sought was better revenue for their artisanal gold. As far as Valerio was concerned, he intended to sell jewellery to his customers, made from artisanal gold that could be fully traceable and for which he could 'tell a story' believing the gold to be ethically mined and fairly sourced from the developing world. His means to do so were to purchase unrefined gold directly from the miners, or secondly, through a planned development company partnering with MICA, or thirdly, through the Fairtrade system. The ends he was after were to pay better prices to the producer and to cut out the middleman in buying artisanal gold.

The situation exposed the limits of East African ASMOs in sourcing gold from their own operations, to accumulate and export enough in order to benefit from fairer trading as commutative justice. While Valerio showed commitment to his own ethics regarding economic justice, this proved somewhat naïve in the circumstances – as a gold trader he was faced with almost impossible barriers to raising enough gold for export in viable quantities. Based on MICA's inability to export a half kilogram quantity of gold, numerous issues were observed in the pursuit of economic justice. These included the lack of working capital to accumulate this quantity; the lack of mining capacity to produce this amount; the lack of legal status for their mine sites; the lack of a system of

production to suit the Standard's requirements for production and finally the lack of sufficiently strong ASMOs to sustainably engage in fair trading of gold. Until these five hurdles are overcome, there can be no export of gold as Valerio's efforts proved, no alternatives to the present gold sales described in Appendix One, even before conforming to the Standard.

Present EFT organisations are unlikely to fulfil their objectives due to limitations in financing and in organisational weaknesses of ASMOs. The evidence showed that Side A are dependent on trading with an organizationally functioning Side B in order to provide commutative justice; yet even more substantial economic justice is required to provide for resource development. MICA, as at least one existing ASMO, is nevertheless unable to accumulate exportable quantities for trading due to financial capital restraints. Without some form of financial investment into working capital and production equipment, there is little likelihood of reaching exportable quantities of gold. The risk for business investment is that miners are not likely to have legally held property rights; yet unless financial risks are taken, there is little chance of attaining the goals of fair trading. Therefore any economic flourishing for artisanal gold miners in East Africa, which is dependent on fair trading to reward miners for responsible mining practices and for favouring alternative routes to market, is unlikely to be realised. In summary, three components of fairness within the situation (fair resource ownership; fair investment and development; and fair prices) have demonstrated, not solutions, but impasses in achieving economic justice.

Yet, economic justice is integral to the just development of the gold resources. Critical conversations within the next two sections further considered the meaning of economic flourishing, and need for practical wisdom in overcoming the obstacles to it.

The contents of Section 5.2 focussed on commutative justice, drawing on the analyses of miners and academics, towards achieving the expectations of Swinton and

Mowat's Stage Two. It has investigated Valerio's assertion regarding fair trading as economic justice. His, the miners', and my concerns reflect Aristotle's claim that the means of virtuous behaviour (as an aspect of just resource development) are integral to the ends of economic justice. There were general matters of resource definition, resource development and resource justice raised in Section Two of the Literature Review, and some of these resource rights, livelihoods and trading issues were shown to be of specific concern to the situation in East Africa. In terms of the impasses noted in 5.1, issues within the economy faced by Aristotle, are still faced by those intervening to promote fair trading; these analyses have not provided ways out of the impasses, they have served to reinforce the ethical need to do so.

In Section 5.3, the 'oughts' of theologically based approaches stressed the importance of relationships, using a Biblical framework of principles, that harmonise with the *mishpâṭ/ sidiq* characteristics of a just God. These imply the need to keep searching for alternative approaches to promoting economic justice, without which as will be claimed in Chapter Seven, there can be no appropriate mineral resource justice. Ways out of the impasses may be approached through adopting Hartropp's four elements, as the means (in general or in principle) to promoting economic justice for the situation in East Africa. They do not provide a blueprint for implementation, instead the particular ends and means of economic justice are to be established through local relationships and mutual understanding between Sides B and A.

Finally, in Section 5.4 certain revised practices are formulated, based on all the foregoing, that are designed to promote economic flourishing within the gold miners' livelihoods. These practices are focussed through independent hubs in collaboration with local churches and individual Christians, rather than ASMOs, yet they are envisaged to support miners, whether organised or not.

The thesis sub-question asked how the expressed ethics of Christian miners could guide hopes for economic justice in the development of their gold resources. Their contributions have answered the question, allowing this chapter to make its partial contribution to theories of ASM development.

The previous chapter examined the socio-economic expectations of the miners with respect to EFT organisations; this chapter has mainly studied the expectations of an individual fair trader with respect to a miners' organisation. The next chapter investigates the flourishing of all species within the purposes of the Christian God for shalom, encompassing all four entities in the situation that concern the Christian artisanal miners in East Africa: God, gold, community, and other species.

Chapter Six

‘Mama Mercury’: The quest for environmental justice

Introduction

The title of this chapter ‘Mama Mercury’¹ is a verbatim transcript of an expression used by Stephen Padde during the 2017 fieldwork in Busia, Uganda to describe the work done in raising awareness of the dangers of mercury by the ladies of EWAD. This is one expectation listed in the Minamata Convention, a global treaty to stop the use of mercury. The other two expectations have to do with firstly, reducing the use of mercury; then secondly, its eventual elimination. All three of these matters concern artisanal gold mining in East Africa, because mercury is used during their activities of panning and amalgamation when processing gold ores, as described below. The burning of mercury-gold amalgam and the subsequent sale of gold, was described in the *vignette* (included in the thesis Introduction), and exemplified practices which were observed in a wide variety of settings, during the six months of fieldwork, mostly in East Africa and a fortnight in Zimbabwe.

Mining, at any scale is not without environmental impacts,² e.g. by the mid-Sixteenth Century, Agricola noted complaints about the detrimental effects on fields, vineyards and olive groves ‘devastated by mining operations’ (1950:8). Detractors protested that the woods and groves are cut down, and ‘when the ores are washed, the water which has been used poisons the brooks and streams, and either destroys the fish or drives them away.’ They say ‘that there is greater detriment from mining than the value of the metals which the mining produces’ (1950:8). Centuries later these dissatisfactions are still faced, ‘few, if any, forms of economic development present the

¹ The hard ‘c’ in mercury is pronounced ‘ch’ by this informant in Busia (Padde 2017a)

² Brian Murphy helps here: ‘In the final analysis, however, impact is, by definition, local and specific. Theoretical commonalities are no more than abstractions; the concrete reality is very particular’ (2001:62).

array of potential environmental, social, and economic problems of the mining industry’ (Pring et al. 1999:45).³

In a global effort to mitigate one aspect of these environmental problems, on the 10th of October 2013, the Minamata Convention on Mercury (the Convention) was ratified, including Kenya, Tanzania and Uganda as Parties to the Convention.⁴ In Article 7 Paragraph 2, the Convention is clear with respect to its goal: each Party that has artisanal and small-scale gold mining and processing in its territory that ‘is more than insignificant’ shall take steps to ‘reduce, and where feasible eliminate, the use of mercury and mercury compounds in, and the emissions and releases to the environment of mercury from, such mining and processing’ (UNEP 2013a:25). The quest, as referred to in the chapter title, concerns the intentions, means and ends of environmental justice with respect to reducing, and then eliminating, the miners’ use of mercury.

It has been claimed that ‘implementing the Minamata Convention, provide(s) an opportunity for research into mercury-free technologies, and training for ASM operators in reducing the negative health, safety and environmental consequences of their activities’ (Toteu 2017:12). Such opportunities did arise for practical research into the reduction of uncontrolled amalgam burning, and into mercury-free technologies.

As before, the purpose of this thematic chapter is to reflect on the situation through critical conversations, which follow the four stages of Swinton and Mowat’s model (2016:89–92) in the next four sections.

Section 6.1 describes the approach by Side A – generally EFT organisations, but here including the Convention; their ratification binds the three East African countries to comply with it. These are contrasted with descriptions of the present situation regarding livelihoods and mercury use by artisanal gold miners in East Africa and elsewhere, as

³ Quoted in (Holden & Jacobson 2007:140).

⁴ <http://www.mercuryconvention.org/Countries/Parties/tabid/3428/language/en-US/Default.aspx> accessed May 2019

supplemented by the academic research community, who have also documented these practices and caution their broader consequences. It will be shown that present Side A approaches, when contrasted with observed practices by Side B, result in an impasse within East African artisanal gold mining.

In Section 6.2 the miners express their own views, reflecting on their use of mercury through their experiences, opinions and practices in the situation. This is followed by an analysis by the academic research community on the history, ubiquity and ease of mercury use in gold mining. The present effects of three ‘oughts’ of the Convention: awareness, reduction and elimination of mercury use, are then described in three subsections. In spite of these efforts, the global community is concerned with the rising use of mercury in the artisanal sector. In view of this impasse regarding mercury use, the Section investigates holistic approaches proposed by secular development theorists.

Next, in Section 6.3, reflections through Western theologies, referencing stewardship and care of creation, evaluate the situation. The theology of shalom as the flourishing of all species under God, is a significant dimension of the conversation.

In Section 6.4, I report on three of my own interventions, in conjunction with the Fairtrade and the CRED Foundations, believing that assistance for the miners is likely to be developed by agents (such as me), acting between the miners on the one Side, and the legislators (national and international) or the EFT organisations, on the other.

Intentions are the ‘oughts’ held by those with a vision for environmental justice, their intentions are discussed in order to inform mining God’s way. I will argue that a just approach to creation care (the means) can be formulated, based on the findings within the situation and arising through the critical conversations. I will show ways out of the impasse in the elimination of mercury; which is a practical end within mineral resource justice under God.

6.1 Current Praxes

This section describes the situation through the expectations of Side A in comparison to the practices of Side B. The first subsection brings further concerns of the Minamata Convention and those of EFT standards and criteria (which are mostly derived from the Convention) to the conversation. The Fairtrade Foundation promises: ‘At the time of the publication of this Standard, Fairtrade International is working on a mercury intervention programme that will be able to respond quickly and efficiently to accelerate the removal of mercury from the Fairtrade supply chain for gold’ (2013:29). The language used indicates their strong intent: ‘The aim of this standard is to drive ASM towards environmental responsibility and continual environmental improvement’ (2013:29). This lies behind their original willingness to involve my expertise as a mining engineer with a commitment to reducing mercury by alternative processing methods, as detailed in 6.4. However, at the time of writing this thesis, there is no programmed intervention to this end by any EFT organization in East Africa.

The second subsection describes how the ore (by now crushed and milled into a powder) is concentrated, then how mercury is used for extracting particles of gold from the concentrates, as a part of artisanal miners’ economic livelihoods.

In assessing the situation in East Africa, it will be argued that the impasses between the two Sides need further investigation and analyses.

6.1.1 EFT approaches

The use of mercury in gold ore processing is addressed by the Convention, which seeks to eliminate four practices: (i) Whole ore amalgamation⁵, (ii) Open burning of amalgam

⁵ When treating a whole quantity of run of mine ore (without concentrating) mercury is introduced into the pulp e.g. it is poured into mills prior to grinding. Mercury droplets, which form during grinding and do not amalgam with gold, stay in the tailings. They either ‘end up in the environment or are sent for cyanide leaching and then to the environment’ (Veiga et al. 2014:352). This practice was not observed in East Africa.

or processed amalgam, (iii) Burning of amalgam in residential areas, and (iv) Cyanide leaching in sediment, ore or tailings to which mercury has been added without first removing the mercury⁶ (UNEP 2013a:59). In reaching this objective: each Party shall develop and implement an eleven-point national action plan which is to be submitted ‘to the Secretariat no later than three years after entry into force of the Convention’ and thereafter, ‘provide a review every three years of the progress made in meeting its obligations’ (2013a:25–6). Importantly, ‘Each Party may include in its national action plan additional strategies to achieve its objectives, including the use or introduction of standards for mercury-free artisanal and small-scale gold mining and market-based mechanisms or marketing tools’ (UNEP 2013a:60; UNEP Global Mercury Partnership 2017:64-6). This clause refers to EFT standards and market-based incentives, for example ‘an Ecological Premium is offered on top of the Fairtrade Premium for ASMOs who chose to eliminate mercury and cyanide altogether, using only non-toxic processes (gravimetric methods, borax) for gold recovery’ (Fairtrade Foundation 2013:29). However, the Convention is binding on the Parties to eliminate the use of mercury; unlike these EFT offers to pay ecological premiums to artisanal gold miners.

An alternative view of the reduction and elimination of mercury in processing artisanal gold is found in the Fairmined Standard, produced by the Alliance for Responsible Mining (ARM), another certifying body in addition to the Fairtrade Foundation.

Although elimination of the use of mercury in responsible artisanal and small-scale gold mining is an important goal, the total and immediate elimination of mercury and cyanide is not a realistic condition for Fairmined Gold. Despite the human health and environmental risks that the use of such chemicals presents, totally eliminating mercury and cyanide is inefficient from the perspective of mineral recovery, and if it were included in the STANDARD as a condition, 95% of all artisanal miners would be excluded from the development opportunity of Fairmined. Instead the STANDARD sets out a process to support ASMOs to progressively minimize the use of mercury and cyanide through

⁶ There have been no observed efforts to do this in East Africa, all tailings are simply brought from nearby dumps and loaded into cyanide tanks for leaching. Tailings from sluicing may be contaminated if they have been mixed with tailings from panning where mercury is invariably added at artisanal mining sites.

implementation of responsible practices and technologies to mitigate the impact on the environment and human health. (ARM 2014:26)

They do not set out their own process (ARM 2014:26–7), but duplicate the Convention with the respect to the four practices (above), and add, ‘In jurisdictions where mercury and/ or cyanide use is prohibited for ASM by law, legislation prevails’ (ARM 2014:26). ARM does not have a presence in East Africa and how their objective of progressive minimization is undertaken elsewhere has not been researched.

As mentioned above, by recovering gold without mercury the artisanal miners will attain a standard that allows for an additional ‘ecological premium’ to be paid (Fairtrade Foundation 2013:37, 65, 66; Mbabazi et al. 2013:22). This premium is payable when ecological disruption due to mining is reduced to a minimum (Fairtrade Foundation 2013; ARM 2014; Impact Facility 2018). This will include discontinuing the use of mercury where ‘it is commercially and technically possible’ (2013:29) e.g. using gravimetric methods for gold recovery.⁷ Thus, there are both financial and environmental reasons for the miners to forgo the use of mercury where possible.

Turning to the publication by a third NGO, the Impact Facility’s basic criteria on environmental performance are found at the end of their document. They repeat the other two Standards and add two clauses, firstly, a minimum age limit in that only trained adults not under 18 years of age may ‘handle mercury or be in the proximity of the mercury vaporising process’ (2018:47). The Facility also adds that the Organisation is expected to switch to a mercury free system unless the expenditure to do so is greater than 10% of annual profit or the payback period is greater than one year or the equipment is not available for local delivery (2018:50), here is an acknowledgement that there will be a cost in acquiring mercury-free technology. The addition of these numbers is helpful, even though they assume a certain level of accountancy skills (profits and payback periods), not observed in any ASMO in East Africa to date.

⁷ A concentrator such as the aforementioned GoldKacha would be a part of a gravimetric process.

6.1.2 Present artisanal practices in extracting gold

This subsection draws from field observations of miners at work in concentrating the ores, after crushing and milling, through the processes of sluicing and then panning, where the mercury is added. The mercury and gold particles form an amalgam, from which the mercury is then burned away, leaving a porous bead of gold for sale.

6.1.2.1 Ore concentrating and tailings treatment

After being milled to a gritty powder, the next steps in the process of extracting gold by artisanal miners are labelled *m'tambo* or sluicing.⁸ Bismark Onyando explains:

When you have changed the rock into a powder form then you subject it to washing on an inclined table and the gold which is a bit heavy will settle onto the cloth which is on that table which is called a sluice box. It is like a towel, some material which can catch the gold particles, so you pass all that gold material and gold will be settling on that cloth which later on you wash in the basin. Now you have gold and some ground rock for panning. Women are so good in sluicing. (2015)

Essentially a sluice has two parts, there is a mixing box at the upper end where water and powder are mixed together and flow through holes in the base that ensure even flow rate and distribution. The slurry then flows along an inclined chute on the bottom of which 'some sacks made of sisal' (Asembo 2015) are placed that trap the gold freed from its host rock during milling, as well as iron (from the balls or found naturally within the reef) and other heavier particles of rock. The ratio of water to powder in the slurry and the angle of the chute are determined through local experience. The over-run waste from the sluice is in the form of a very wet mud and is known as tailings⁹ which flow into a settling pond of some kind. In the pond, ground rock (tailings) settles below the dirty water which is scooped off with pails and reused for mixing. According to women miners Josephine Aguttu and Rosemary Ongang'o, sluicing is a messy, back breaking, labour intensive and time consuming job (Aguttu 2017c; Ongang'o 2015).

⁸ 'Most efficient of the hand methods in terms of throughput, but requiring an ample supply of water, are the sluices ... These are simply long troughs of appropriate slope with devices (riffles) affixed to the bottom in such fashion as to trap the valuable minerals' (United Nations 1972:45).

⁹ 'TAILINGS (tailings pond): The gangue and other refuse material resulting from the washing, concentration or treatment of ground ore (hence usually fine grain). Commonly delivered to place of storage as a slurry, hence tailings pond in which the solids settle out of the water which may then be reclaimed' (United Nations 1972:171).

When the ponds fill up, the tailings are shovelled out and stacked alongside until taken for reprocessing which starts with spreading them out in a thin layer for drying in the sun (Okoth 2015) and once dry the tailings are milled again to liberate further grains of gold. However inefficient the sluicing may be, the gold remaining in tailings is reclaimable. ‘The tailings that remain can be re-crushed to get remaining gold, sometimes we sell the tailings to those who are interested’ (Asembo 2015). That is, the tailings are treated repeatedly by drying, milling, sluicing and panning until exhausted of all free gold particles and they may then be sold to businesses for final treatment by chemicals such as cyanide which dissolve the remaining precious metal out of the ore.¹⁰

Sluices made of corrugated iron sheets or wooden boards are easily made and carried by individuals to water sources, heavier structures may be left *in situ* but individuals supply their own *gunia* (sacks), pails for water and *troughs*. Once the total volume of powder has been sluiced, the particles trapped in the *gunia* are carefully washed into basins, this is called *teng’o* (shaking) and is exactly that, shaking the sacks while still wet.

While women may be good at this process of concentration,¹¹ (Ongang’o claimed she processes four *troughs* in a day), the miners themselves or trusted family members do the sluicing and blanket washing of the original ore. It is in this first pass, where the contained gold may be as high as 80 grams per ton, as claimed by Otieno, and so the ore is concentrated under scrutiny. As Ongang’o said sadly, that when a man

gets so many grams and he has gone to sell maybe in Migori, then the mother who is at home is crying ‘Oh my husband has gone for gold. I hear he has got ten grams, he has gone to Migori and he has come back without.’ (2015)

¹⁰ Besides a familiarizing visit to one cyanide plant in Migori in 2016, they were not investigated during the project.

¹¹ ‘CONCENTRATION Separation and accumulation of valuable minerals from waste material. Improving the value of ore by removing waste materials’ (United Nations 1972:168).

But when women re-treat the tailings ‘you cannot get a woman getting a gram, it’s just a point¹², two points, three. It is a day to day work for us to get something’ (2015). There is a clear split in the earnings of those deriving their livelihoods either from hard rock mining and treatment of original underground ores (usually men) and those only re-treating tailings (usually women and family members). Onyango agrees that the retreatment of tailings is far less lucrative:

So the artisanal miners in this area if you look at them keenly you find most of them are mothers, some young boys who can do it just for the sake of getting little to keep them moving. They are not earning so much out of it. (2015)

This is because the first round of processing removes the random enrichment from the original rocks and all tailings have only remnant gold in small amounts. However, the tailings contain enough to hope for a ‘little’ livelihood for women and family members ‘to keep them moving’ (Onyango 2015).

The above descriptions confirm Alimu’s sentences (that opened the thesis), and Asembo’s assertion that this is a ‘rudimentary way of looking for gold which is done with only local skills. You toil, there is a lot of labour, the artisanal miners work very hard’ (Asembo 2015). Onyango agrees that it ‘involves a very elementary form of mining and quite gregarious¹³ (*sic*) because the people who are involved are not having a lot of skills’ (Onyango 2015).

6.1.2.2 Panning, amalgaming and heating

After *m’tambo* and *teng’o* the next step in the process is panning the concentrate. ‘Now we are panning (*woko*) the materials from the blankets and put mercury (*yath*)¹⁴ in the pan’ (Okoth 2015). Typically in East Africa before the process begins, a little mercury is poured from a vial or small container into the ubiquitous trough followed by the concentrates and water. Asembo said ‘we amalgamate using the mercury, I don’t know

¹² A ‘point’ is common parlance for a tenth of a gram, even in Zimbabwe.

¹³ I believe he meant gregarious!

¹⁴ *Yath* – medicine (Odaga 2005e)

how mercury always found its market here, I don't know where it comes from, but I know it is here in plenty' (Asembo 2015). The volume of mercury added is in proportion to the expected amount of gold, based on experience. The basin is shaken and stirred by hand, 'they don't even do panning using hand gloves that means that their hands to get into contact with the mercury directly' (Onyango 2015). Every few minutes the basin is carefully tipped to discharge water and lighter waste materials, reducing the mass, over and over again until a little water and a few grains of rock and iron are left floating on top of a pool of free-flowing amalgam.

The pan discharge which contains small amounts of entrapped mercury is meant to be contained in ponds, but Onyanga worries:

The other problem I would cite is that some of these people take these tailings and do the sluicing just on the river banks because that is the source of water, but you see it causes a lot of danger to aquatic life. The mercury is expected to roll even down to the lake. I don't know whether that is why we don't have a quite number of fish in this Lake Victoria nowadays. It can as well be a reason we are not getting some species of fish from the lake. (Onyango 2015)

Significantly, he expressed clear concerns about the present environmental impacts of mercury on other species in the vicinity, when asked how he generally saw problems with his livelihood as an artisanal gold miner.

The amalgam is then poured from the pan into a piece of cloth as Okoth explains:

The type of cloth we use is like the lining material inside a coat. You just pour it inside and you squeeze it, the mercury goes out like you are filtering. Then you remove the mercury and the gold remaining inside the cloth. (Okoth 2015)

The excess free mercury, that is squeezed through the cloth, is replaced into its original small plastic container for future use and the ball of amalgam contained within the cloth resembles window putty in colour (grey) and texture (stiff paste). The size of ball is entirely dependent on the amount of gold contained in the concentrates, from as little as the tip of a pencil (points of gram) to the tip of a finger (numbers of grams). The grey metallic amalgam is kept in the cloth until the next stage, 'After that we burn' (Otieno 2015) i.e. the process moves on to heating the paste:

From there we have amalgam gold and we now heat it to remove the extra mercury inside. Before heating it is silvery and then heat it to get out the extra mercury and it turns to yellow. After heating it we now look for the buyers. (Okoth 2015)

Only one amalgam burning or heating (*bulo mali*)¹⁵ was ever witnessed in Kenya that did not occur in the open air. This was when George Okoth placed an inverted metal basin over the fire pot, and both were placed on a larger metal tray as a demonstration of a technique he had been shown to recover evaporated mercury. Afterwards, tiny droplets of mercury were seen on the tray which were then brushed away as insufficient for reuse. In every other case vapourised mercury was released into the atmosphere.

Other than Okoth's brief description above, no other informant discussed the burning of amalgam. Although hours were spent discussing finances, machinery, gold exports and so on, the subject of amalgamation and then burning off mercury was generally a notable omission. However Odhiambo said, 'For you to be in a better livelihood it must be that there is effectiveness in production, efficiency in extraction, and efficiency of amalgamation' (Odhiambo 2015); opening the possibilities and challenge for processes that are more efficient than those using mercury.

6.1.3 Assessing the impasses

Eleanor Fisher and John Childs note that the 'potential for securing economic, social and environmental benefits' is being demanded by the jewellery trade (2014:130). This trade, as noted in the previous chapters, has partially involved itself through EFT organisations whose standards aim towards the means and ends of these benefits in the sector, including environmental. Their ethical efforts continue the pressure on the artisanal gold mining community to raise awareness, reduce and then eliminate the use of dangerous mercury as per the Convention. Yet these earnest expectations of change whether through national legislation, or national plans, to implement the binding

¹⁵ *Bulo* - putting on hot ashes (Odaga 2005b).

Convention, or through financial incentives offered by ethical traders have not yet resulted in observed changes in mercury use and its gaseous release by miners. The previous chapter has already noted the complications arising from expecting change through ASMOs and through the financial restrictions of commutative justice (should it ever be achieved) for acquiring mercury-free equipment.

According to Side A, it is clear that miners ought to reduce and then eliminate their use of mercury, the quest is how? There is presently an impasse between Side A, either summarily banning, or otherwise prescribing the reduction and then elimination of mercury use; and the miners (as Side B) trapped in their ongoing use of mercury, because no credible alternatives have been offered, thus far.

The next section analyses this impasse further, noting Christian miners' desire to serve God through caring for creation care and the understanding by the academic research community of the difficulty in replacing the ubiquitous use of mercury.

6.2 Cultural/ contextual Analysis

Chapter Four examined the ordinary theologies of Christian artisanal gold miners in East Africa regarding God, creation and gold within their social concerns and fieldwork methods for this research were presented there. Some of their additional articulated beliefs are now presented in 6.2.1, and a strong sense that God, as the Creator, is concerned about mercury, was often expressed by them.

The reasons for the miners' ongoing use of mercury are analysed in 6.2.2 by the academic research community. Returning to expectations of the Convention and EFT standards and criteria, the next three subsections (6.2.3 – .5) analyse three global strategies towards raising awareness of the dangers of mercury; mitigating its impacts; and eliminating its use. The first of these efforts have been successful in Uganda, the others less so; and it is the latter two that will continue to be pursued in this chapter.

In 6.2.6 concerns about the rising use of mercury by artisanal miners are expressed, and in 6.2.7 there is a call by theorists for a holistic approach to development as a possible approach to decreasing the use of this toxic metal.

6.2.1 Informants' ordinary theologies of God and mercury

Regarding awareness of the dangers of mercury and desires to reduce its use, Kitabire said that God is one and we all serve a living God who 'gives you treasure' (Kitabire, Aguttu, et al. 2017) and she once prayed 'Heavenly Father that you show the ways of how to help people to run away from mercury, heavenly Father that these places can be mercury free' (Kitabire, Padde, et al. 2017). When Padde was asked how he saw the hand of God in gold mining and the local community he surprisingly answered 'God the creator, God the Lover, God the Justice Implementer. We think God really loved us more than any other person to give us the gift of gold here in Tiira' (Padde 2017b). But he went on to warn:

Mercury can harm ... innocently. We need to be thinking about a responsible way of mining so that the environment which is polluting the Mother Earth which God created does not get affected. The waters that go downstream can affect humans and animals not involved in mining should not be contaminated ... If we are mindful of pollution we have shown even greater love to the generation to come in the next ten, twenty years, what is it going to be like? We must be mindful of others, have the love for the generation to come; that is what we need to preach to people. (Padde 2017b)

Padde noted two important concerns for mercury, firstly, its ability to pollute further afield downstream from the mining sites and secondly pollution will affect generations to come. Aguttu added the following comments, referring to the small mechanized gold concentrator (trade name GoldKacha) manufactured in Zimbabwe brought to Busia, Uganda through the CRED Foundation:

Mercury is very poisonous to both the humans and the animals so the GoldKacha in one way, like Padde said, was a vision that God gave "I need to save my people and their creatures". So if they can have a GoldKacha they will use less mercury in their community and this will make them have longer lives than they will have if exposed to too much mercury. (Aguttu 2017b)

She also said 'God has come to cleanse us and in giving us a GoldKacha, His purpose has come to pass' (Aguttu 2017c). Margaret Ongura similarly reiterated her faith 'God loves us that is why the GoldKacha came. God thought "oh my people, I love them and to reduce the use of mercury that is why I have brought the GoldKacha"' (Ongura 2017). Yet, the unexpected findings which connect technology to the will of God show how Christian miners raise these matters to theological concerns. These articulated beliefs can be interpreted to show a wish to see the end of mercury as an integral part of environmental justice; and later sections will show how the Convention, the Christian artisanal gold miners interviewed, and theologies of creation care, inform the practical goals of reducing and eliminating the use of mercury.

Elsewhere, during a focus group discussion held on 5th December 2014, Julius Opiyo worried about the effective processing of materials (ore) from underground. He noted that the National Environment Management Authority of Kenya was concerned that the current system is polluting the environment through the miners' use of chemicals, and appealed to me to bring ideas for reducing 'pollution of the land.' At the same meeting he noted the work Onyango and I had done on 'the assembly of the mercury recovery

unit' (MICA 2014). This initiative is discussed in 6.4, as well as my work in Zimbabwe and then Uganda with the GoldKacha, mentioned above.

Onyando, speaking on behalf of his ASMO, said that they had adopted a slogan of three 'Ms': 'Mine your gold. Mind your health and safety. Mend your environment.'

Referring to the last 'M', he went on to explain that they:

were not working correctly as a group but we were working individually each person was processing his ore in his own way and it was difficult to manage the way we use mercury. The purpose is to reduce the massive use of mercury in artisanal mining. (2015)

This line of thinking was elaborated by another member of the same ASMO, Dan Omonde, who said:

One of the challenges we face is that there are no practical or leading examples based on research to convince the community over the dangers of mercury in gold mining as an artisanal activity. My great, great grandfather did mining, today I am also doing mining and we've always been using mercury and disposing it anyhow. (2015)

These examples show the miners' awareness of the dangers of mercury, but they also analyse the difficulties in overcoming its present use, setting up tensions between their desire to do the right thing and present practices. The impasses in mitigating the effects of uncontrolled mercury vapourisation and in eliminating its use have been noted above, providing insight into both the 'is' and 'ought' of the miners' use of mercury in the situation. The difference between these two states becomes acute when seen from the perspective of Christian artisanal gold miners who have been made aware of the need to reduce the impacts arising from this form of processing and interpret this pollution within creation care.

6.2.2 The use of mercury in ASM

In spite of the above concerns by Christians in Uganda and Kenya, mercury is still used daily in the economic livelihoods of artisanal gold miners. This subsection investigates the ease, ubiquity and antiquity of using mercury in gold mining, including the contemporary situation in East Africa.

The process of using mercury ‘is fairly simple and has a comparatively high rate of recovery. Its first application dates back to mining in Bosnia under the Emperor Nero (54 to 68 AD) and is employed intensively’ (Maponga 1997:199). As a chemical formula, mercury is abbreviated to Hg, the letters referring to its Latin name *Hydrargyrum*¹⁶ or ‘Liquid silver’ as it is the only metal with its silvery lustre that is liquid at ordinary temperatures (Murray et al. 1933b:351). In the Complete Periodic Classification, mercury (atomic number 80) occurs next to gold (number 79), readily forming a ‘pasty’ mercury-gold amalgam (New Encyclopaedia Britannica 1987). Amalgamation ‘depends upon the mutual affinity of mercury and the precious metals which causes them to blend together’ thus trapping the ‘gold which might otherwise wash away and be lost. ... amalgamation is probably the oldest known technique for recovering fine flakes and grains of precious metals’ (United Nations 1972:72). Mercury amalgamation is ‘suitable for already-liberated elementary gold’ occurring in grain sizes ‘ranging between 20–50 µm and 2 mm’ (Maponga & Ngorima 2003:149). In other words, it works well where free gold is found, e.g., river beds, soils, and weathered rocks such as those on or near the surface and processing with elementary crushing and milling can liberate gold particles into these grain sizes. Recorded knowledge of both the amalgaming power of mercury and its toxicity dates back to Pliny the Elder’s *Natural History* completed in AD 77:

There is also a mineral found...that is always liquid, and is called quicksilver. It acts as a poison on everything...All substances float on its surface except gold, which is the only thing that it attracts to itself; consequently it is also excellent for refining gold, as if it is briskly shaken in earthen vessels it rejects all the impurities contained in it. (Pliny 1952:77)

The artisanal gold processing methods observed in the situation include this amalgaming with mercury to extract gold particles from the crushed and washed ores (Mutagwaba et al. 1997:148). Crispin Kinabo believes that one (non-recoverable) gram of mercury is used to recover one gram of gold, that is, the ball of mercury-gold

¹⁶ <https://www.britannica.com/science/mercury-chemical-element> accessed February 2019.

amalgam contains approximately 50 percent of each metal (Kinabo 2003a:303), although this ratio may taper off to as little as 10 percent mercury (Mondlane & Shoko 2003:277).

Gold is then recovered for sale by heating the amalgam to drive off the mercury (United Nations 1972:72). It has a low ‘boiling point of 356.73°C’ which means that mercury ‘can then be released from its bond with the more stable gold using the relatively low temperatures achievable with a standard wood fire. This leaves a doré, a pockmarked, “spongy” gold’ (Clifford 2012:25). A hard porous ball (or whatever shape the amalgam was originally), that has a golden hue, is left behind. In East Africa, this is simply called ‘burned gold’, which is weighed and bought by the dealer. The vapourised mercury emitted into the atmosphere is the first concern for health and the environment.

The discards from panning, known as ‘tailings’ (Israel & Asiro 2003:566), contain minute particles of detached mercury and it is believed that of the mercury used in gold ore processing ‘30% enters river systems through tailings’ (Mondlane & Shoko 2003:277). The impacts from mercury released into the environment through these contaminated tailings, are a second concern. In East Africa, attempts are made to prevent this mercury-contaminated, waste water from entering river systems by keeping it in holding ponds; mostly for reuse in concentrating ores, e.g., sluicing as mentioned in Appendix One.

Techniques using mercury are ‘easy to use, available, inexpensive and miners are not aware of, or choose to ignore, the health risks’ (Veiga et al. 2006:438). The assertion regarding health risks will be returned to, but the fieldwork concurred that these techniques are easy to:

emulate, set up, operate and maintain, requiring little or no previous knowledge or training. ... Mercury also appears to be universally available, and typically the only option available for miners to extract their gold. Whether legally sanctioned or not, mercury’s wide usage is testament to the fact that it can be obtained in small-scale gold mining regions. ...Amalgamation is the preferred extraction technique of most small-scale miners because, very much like the decision to take up mining in the first place, it is the most viable and suitable option given their circumstances. (Clifford 2012:50–1)

The fieldwork also noted mercury was easily carried in small vials, ubiquitously affordable, accepted as effective, and apparently not widely regarded as an environmentally damaging risk. Asembo has already commented that mercury-gold amalgamation has always been around. As noted in the field and by others (Hollaway 1997; Lacerda & Sa-lomens 1998; Clifford 2012:50; UNEP 2012:11), it is eminently practical, panning with mercury is quickly learned, heating is carried out with a wood fire or blowtorch, mercury is relatively cheap and readily available. Amalgaming requires no capital equipment, and the mercury, the amalgam and the gold beads are all extremely portable; this attribute is useful should the need for secrecy, or sudden departures from the site, or smuggling occur.

The simplicity and convenience of using mercury in processing gold has now been noted, yet there have been pollution and health concerns since Roman times. These concerns are substantiated by recent research into mercury's negative effect on artisanal miners' health in Migori, Kenya (Ogola et al. 2002) and Tanzania (Bose-O'Reilly et al. 2010; Bosse Jønsson et al. 2012; Van Straaten 2000). As Parties ratifying the Convention, the three countries in East Africa have committed to reducing the use of mercury towards its elimination. Kenya's immediate ban on the use of mercury within the legal definition of what constitutes artisanal mining, e.g., in their Mining Act (2016), has not been effective, as evidenced from the field. Left to their own devices, artisanal gold miners will continue their use of mercury, so the impasse in the situation (with which this chapter is concerned) is the unlikelihood of change where mercury is used in miners' livelihoods, without intervention. Thus the Convention seeks the participation of EFT organisations towards the means and ends of reducing and eliminating the use mercury.

However, the warning raised in Chapter Two regarding wicked problems is applicable here. The very ease, cheapness and wide use of mercury make its

replacement a complex matter, for which solutions are not going to be easily found, developed, implemented and sustained. The following conclusion by the MMSD group is important in the mitigation of mercury impacts:

In practice, new measures will need to be financially attractive to miners if they are to adopt them. In particular, they need to be informed about the dangers of mercury amalgamation and helped to adopt appropriate techniques for using mercury more safely in the short term, although ultimately its use should be stopped. (2002:333)

There are three actions proposed here, nearly two decades ago: education on the dangers of amalgamation, also mentioned by (Hentschel et al. 2003:51); assistance in adopting safer techniques; and thirdly, eliminating its use through measures that need to be financially attractive to miners. Financially attractive or not, there are already two sources of pressure in this situation to stop the use of mercury. The first source is the adoption of the Convention by these East African nations and therefore their acceptance of the eventual end of mercury use. As a second source of pressure, one Party has recently banned its use by artisanal and small-scale miners through its Mining Act (Republic of Kenya 2016). In order to help miners conform to national or international legislation, NGOs are called to be involved in researching approaches to the ends and means of mercury reduction and elimination. For example, ‘within the context of in-country objectives and support, stakeholders and experts would work together to develop and implement strategies to address issues such as mercury ... use’ (Buxton 2013:20) e.g. the AGC in West Africa¹⁷ or the Facility in East Africa.¹⁸ The three strategies discussed below, follow the MMSD guidelines: raising awareness of the dangers of mercury; reducing its environmental impacts; and obviating its use by providing another way to process gold ores.

¹⁷ <http://www.artisanalgold.org/our-projects/africa/> accessed on May 2019

¹⁸ <https://www.impactfacility.com/lake-victoria-gold-program> accessed on May 2019

6.2.3 Raising awareness

The tenth of eleven clauses, Paragraph 1 (j) in Annex C of the Convention calls for ‘strategies for providing information to artisanal and small-scale gold miners, gold processors and affected communities’ (UNEP 2013a:60; UNEP Global Mercury Partnership 2017:60) and in one of the group discussions, informants complimented the work of EWAD in this regard:

I also want to appreciate how EWAD has helped us by sensitizing us in the most crucial thing that is around us, that is the poisoning of mercury. Actually from the time EWAD has come here to date they still call themselves EWAD, but in the community of Tiira (the village) they are called ‘Mama Merchury’ (Terry laughs, everyone smiles in agreement) because they have created a lot of awareness. (Turning to Kitabire) I think God must given you a vision to say mercury is so dangerous. So I think I need to really appreciate God for that and I believe and I want you to quote (turning to Terry) if you want anything done then give it to a woman and they will do that. Sincerely they have created a lot of awareness, they interacted freely with the people around, have entered rooms, kitchens, using utensils, they have interacted with women so, so well. I just wanted to say two very important things. One, besides getting satisfied through earning a lot of money as a community of Tiira, I know when we get ecological gold, it will save a population of not less than 20 000 people from the dangers of mercury. They can be direct miners or not but when the environment gets polluted we all suffer, all suffer. So I encourage very much that we go in for ecological gold (Padde 2017a).

These successful interventions by EWAD to promote awareness of the dangers of mercury resulted in their nickname as ‘Mama Merchury’. There is also a call for continued effort towards mercury free gold to stop the local population suffering, even though as noted above the chances remain low for any ASMO reaching the ecological standard to qualify for the premium. Yet Aguttu agreed with the principle:

I would look at is us producing ecological gold that is highly marketable which is mercury free. I think in the long run we will not have mercury being very poisonous in our communities. Slowly we shall be able to expel mercury from our communities (Aguttu 2017a).

This was also backed by Asere Rosemary:

I thank God who brought EWAD in our community. I had never known that mercury was dangerous to human life. Before that even in their homes when they cook food, when they were expecting, they would just touch mercury with their bare hands, burn amalgam in the kitchen even when they were cooking food. EWAD came and trained us so they helped us (Asere 2017).

Researchers in Ghana found miners were ignorant of the dangers from mercury to both human health and to environmental pollution (Hilson & Pardie 2006; Clifford 2012), but here, the informants showed their knowledge of these dangers and their gratitude to EWAD and Fairtrade. On another occasion, Padde was to say:

When the local support organization (EWAD) approached us, I think they realized and saw it for themselves that mercury (pronounced merchury) amalgam was being melted left, right and

everywhere. So until when they came in to tell people as to why we should keep merc(h)ury out of direct reach of children and women and men, I think that's the greatest achievement and biggest landmark of how Fairtrade has impacted us in Busia. (2015)

These verbatim examples, drawn from the field work provide evidence that the work of others, prior to my arrival, has successfully raised awareness of the dangers and changed aspects of handling and exposure to mercury.

In Annexe C Paragraph 1 (i and j), the Convention calls for strategies that prevent 'the exposure of vulnerable populations, particularly children and women of child-bearing age, especially pregnant women, to mercury used in artisanal and small-scale gold mining' and for 'providing information to artisanal and small-scale miners, gold processor, and affected communities' (UNEP 2013a:60; UNEP Global Mercury Partnership 2017:58-61). The need for education about its dangers is being addressed by such organisations as EWAD, e.g. I observed that amalgam was not being burned indoors or near homes.

With reference to Paragraph 1 (h) which calls for a public health strategy on the exposure of miners and their communities to mercury, respondents such as Wamalwa mentioned that whenever Government officials visit or when the miners visit local clinics they are frequently reminded of the dangers of mercury, but nothing tangible is done beyond these verbal warnings (Wamalwa 2017b).

Although the respondents have been made aware of the dangers from mercury through outside interventions, there was no evidence that any form of closed burning of amalgam was continually being done through using mercury retorts; nor had possible mercury-free options (irrespective of their affordability) been demonstrated.

Yet other obligations in the Convention require more to be done, the Parties are beholden to reduce and then eliminate the use of mercury, as reported through their action plans. As the following subsections will show there are presently no means available to artisanal gold miners in overcoming the impasse within their use of

mercury. The evidence is that they are aware of the need to care for God's creation but have no opportunity to process their gold without mercury.

6.2.4 Mitigating the impacts of evaporating mercury

During my field trip to Geita, Tanzania in 2014 an ASMO official exhibited a large mercury retort¹⁹ made of iron as evidence of their commitment to mitigating the impacts of mercury within their local environment, but a closer look showed it had not been used in months, if ever. While global environmental impact uncertainties are high, in terms of miners' health, there are:

upwards of 15 million miners involved worldwide and potentially 100 million people living in their communities ... Mercury levels among such miners tend to be high on average, nearly three times that of the general population, with some individuals at extremely high levels of exposure. (UNEP Chemicals and Health Branch 2019:57)

Jesper Bosse Jønsson, *et al.* investigated the sustainable use of retorts and found the so called 'win-win' situation as claimed originally by the Global Mercury Project had 'lost' in that there was no evidence of sustainable retort adoption by miners in Tanzania (Bosse Jønsson *et al.* 2012; Kinabo 2003a:303). The lack of widespread use of retorts (and hence the burning of amalgam either in the open air or indoors) was also observed in Ghana (Aryee 2003:414), Mozambique (Mondlane & Shoko 2003:277; Kazilimani *et al.* 2003:252), Zimbabwe (Maponga & Meck 2003:367), the Philippines (Israel & Asiro 2003:559), Papua New Guinea (Crispin 2003:608), Peru (Seeling 2003:635), the Guianas (Vieira 2006:451) and an unnamed Latin American country (Hinton, Veiga & Beinhoff 2003:186). The lack of retort use is thus a global phenomenon and four major reasons given by miners around the world for the lack of their use (as listed in these articles) were that the retorts were too expensive, unavailable, inefficient and inconvenient. Also the 'mercury recovered by retorting often does not have the same

¹⁹ Mercury retorts are enclosed systems in which the amalgam is heated in a crucible and the evaporated mercury passes through a tube and condenses into an adjacent, cooler chamber. 95% of the mercury can be recovered, significantly reducing air pollution and occupational exposure (Hinton, Veiga & Veiga 2003:107; Hilson & Pardie 2006:112).

amalgamating properties as new mercury’ (Hinton, Veiga & Veiga 2003:108). Tests showed that 2 percent of the gold is lost through open heating using a blowtorch and none in the retort (Israel & Asiro 2003:563), yet there are suspicions that gold loses value because retort heating causes a difference in colour of the burned gold bead (Hinton, Veiga & Veiga 2003:108). In spite of knowing the dangers of uncontrolled mercury fumes, one respondent in Peru answered “We know that we are contaminating ourselves. But what can we do? We have to work,” (Seeling 2003:634) which captures the typical anecdotal experiences from fieldwork in East Africa. Miners are caught in the impasse between the knowledge of mercury’s toxicity, arising from the Convention’s awareness campaigns; and the lack of proffered alternatives.

With respect to equipment, Sam Spiegel argues that ‘efforts to lower mercury emissions should aim to support miners and their livelihoods by supplying access to better technology’ (Schmidt 2012:A428). Similarly, Bosse Jønsson *et al* note:

the lack of a “silver bullet” solution to the “mercury problem” in ASGM saturates the debate. Nevertheless, commentators continue to look for ways to reduce the sector’s mercury-usage. One way is to select and encourage extraction practices that are tailored to the context in which the ASGM activities are carried out. (2012:7)

They continue that ‘new technologies (with technology deemed new until it has been rejected or broadly recognized)’ should have ‘continuous support from an institution with expertise, local representation, and mandate to enforce the law’ (Bosse Jønsson *et al*. 2012:7). While the earlier requirements to supply better technology, such as the GoldKacha (detailed further in 6.4.1), have been taken into account; the latter institutional caveats regarding continuous support and so on, have not been fulfilled in the situation to date.

6.2.5 Eliminating the use of mercury

A recent example towards eliminating mercury, described in the related Guidance Document is a mercury-free system in use in Burkina Faso and Senegal. This is the

Artisanal Gold Council's (AGC) '2-kg Model', whose cost amounts to around USD 80,000 which at 2017 gold prices 'is equal to the price of 2 kg of gold hence the name of the model' (UNEP Global Mercury Partnership 2017:89); which is no small amount.

As has been noted in Chapter Four, there is often a sizable gap between the definition of artisanal and small scale mining and the subsequent expectations placed on the sector, and the Convention is no exception. In Article 2 "“Artisanal and small-scale gold mining” means gold mining conducted by individual miners or small enterprises with limited capital investment and production' (UNEP 2013a:15) and yet the expectation is the promotion of 'best environmental practices'²⁰ and alternative technologies that are environmentally, technically, socially and economically viable' (UNEP 2013a:26). The previous chapter analysed the difficulties in raising the requisite financing needed to reach exportable quantities, let alone the estimated cost (USD 80 000) of alternative technologies to reach best environmental practices.

Even if such funding could be raised by miners, research into a similar plant in Zimbabwe, the Shamva Mining Centre (SMC) exposes how unlikely are the chances of its sustainability. The events surrounding this similar intervention are instructive with respect to use, ownership and management of a centralised gold ore processing plant. The Pact report gives a succinct overview of the issues associated with the establishment of the SMC to treat artisanal gold in 1989 and its eventual demise around ten years later. They write:

A key SMC project concept was that central milling facilities could help bring illegal mining into a legal framework and create a more centralized, organized, and easily regulated way of processing gold. It was believed that this could help control mercury usage and facilitate access to more advanced technology that would raise incomes. (Pact 2015:13–4)

Now, thirty years later this research project is grappling with the same three latter objectives: providing opportunities to eliminate mercury usage, facilitating access to

²⁰ "“Best environmental practices” means the application of the most appropriate combination of environmental control measures and strategies' (UNEP 2013:15).

appropriate technology and generating exportable quantities of gold that would qualify for EFT premiums and hence raised incomes.

Pact notes that the SMC was heralded by the UN Economic Commission for Africa (UNECA) in 2002 as a ‘best practice in SSM’ and ‘as a widely cited example of an international donor-funded project to set up a gold-processing mill for ASM.’ It ‘was initially viewed by researchers as a proactive step towards improving environmental management and economic efficiency by sharing technology’ (Pact 2015:14). These positive citations around 2003 led researchers to believe that experiences such as these ‘have demonstrated that the concept of shared mining equipment is feasible and these centers can provide an important basis for training in processing methods’ (Hinton, Veiga & Veiga 2003:111).

These hopes proved unsustainable after ownership of SMC was transferred to a commercial company (2003:111). Positively, the technology of the SMC did enable ‘the potential for small-scale miners ... to increase their productivity and improve the viability of their mines, until management problems emerged’ within the Centre (Pact 2015:15). ‘Over the long term, multiple problems affected execution of the SMC’s development vision’ which ‘led to underutilization and then abandonment’ by ‘poorer artisanal miners – the individuals for whom the SMC was established – (who) could no longer benefit from the program’ (Pact 2015:14). While the ends of economic and environmental justice remain clear (raised incomes and the elimination of mercury), the failure of the SMC is a significant event for interventions into artisanal gold mining.

As a result, Pact lists lessons that can be learned, e.g. miners who wish to become entrepreneurs need a complete package of business development services to thrive and grow. In addition to technology and information about mining methods and sustainable environmental management, they require business planning and management skills, access to credit, and to profitable markets. In fact, miners might benefit more if they

leave the processing centres under qualified and experienced managers. ASMOs or a few members within ASMOs should not be allowed to ‘monopolize program benefits for their own individual gain’ (Pact 2015:15), reflecting the experiences of an EFT partner in the previous chapter.

Towards the ends of justice, an argument for longer term training may be made but ‘most ASM training in Africa currently occurs through externally-funded projects’ (Toteu 2017:13) using ‘familiar project-driven and donor-dependent models’ (2017:10). To its credit, the Africa Mining Vision takes the sector seriously, affording ASM an entire section of the document (African Union 2009:26–9). While acknowledging that it ‘represents a special challenge, which require a separate discussion and different and tailor-made approaches to address the challenges’(2009:15) they too criticize past interventions as ‘top-down, short, ad-hoc, lacked continuity and adequate funding’ (2009:27). Presently, donors typically finance three year projects with EFT organisations, e.g., Comic Relief financing Fairtrade’s activities between 2017 and 2020 partially in East Africa²¹ which, based on the above, is too short a time to create lasting change. The past failure of the SMC raises substantial matters regarding time, finances and management which go to the heart of development interventions within artisanal gold mining.

And yet, irrespective of the foregoing, a successfully managed mercury-free centralised processing plant exporting fully traceable gold that has been mined responsibly, would contribute to the ends and means of both the fair trade and environmental dimensions within mineral resource justice.

²¹ <https://www.comicrelief.com/news/comic-relief-and-fairtrade-africa-golden-partnership> accessed May 2019.

6.2.6 Global concerns over mercury and ASGM

In spite of the above expectations, and possibly because of the impasses that have arisen, an NGO, Pact notes the rising use of mercury:

Like air pollution, water and soil pollution from mercury has increased exponentially, with more than 200 million artisanal and small-scale miners dependent on mercury to recover free gold. Use of mercury was largely unknown, especially in gold panning, 30 to 35 years ago, because of the coarseness of alluvial gold. However, as the rich high-grade areas have been continuously reworked and as finer or lower gravel grades are treated, the gold recovered is much finer and harder to concentrate. Gold panners and small-scale miners (now) use mercury fairly extensively during the gold-recovery process. (Pact 2015:110)

The increasing use of mercury and its two forms of disposal by miners are being continually monitored. The Global Mercury Assessment 2018 reports that in 2015 artisanal and small-scale gold mining accounted for 37.7% of mercury emissions to the atmosphere, an amount of 838 tonnes, ranging between 675 and 1000 tonnes (UNEP Chemicals and Health Branch 2019:15). Secondly, the sector discharged about 1220 tonnes into terrestrial soils and freshwater environments (2019:3). This sum of 2060 tonnes is a major increase from the 2011 estimate of 1400 tonnes (UNEP 2012:9; Bernaudat & Keane 2013). Importantly, the increasing global quantities of mercury used by artisanal gold miners are further evidence for the enormity of the challenge.

The statistics are regularly updated but as UNEP has pointed out ‘Calculating emissions from this sector presents a particular challenge because it is typically widely dispersed and often unregulated and may be illegal. Uncertainties regarding release estimates from the ASGM sector are therefore high’ (UNEP Chemicals Branch 2013:6). It has been argued that ‘Clearly, more comprehensive and more accurate statistics on global Hg trade can contribute greatly to our understanding, and eventually our control, of Hg use in ASM activities’ (Veiga et al. 2006:444). It is not clear how more accurate estimates of the quantity used in East Africa or even in the world on annual basis are materially significant in attempts to eliminate mercury use entirely.

The concerns over pollution from such large quantities of mercury released during artisanal gold processing continue. ‘In contrast to other chemicals (such as cyanide) that

cause spectacular accidents when released, mercury has a long-term, time-delayed impact and is commonly referred to by many experts as a “chemical time bomb” (Vieira 2006:454; Lacerda & Sa-lomens 1998) hence the need for these investigations. Sandra Pardie and Hilson note that inorganic mercury when released into the environment in both liquid and gaseous forms is transformed by bacteria into methylmercury. This toxin ‘subsequently bioaccumulates in soils, water, plants and animal tissues, increasing in concentration at the higher trophic levels of the food chain’ and ‘has proven to be a major health threat to a host of species, including humans’ (Pardie & Hilson 2006:56). They also noted, elsewhere, that mercury poisoning manifests through neurological malfunctions such as dizziness, fatigue, headaches, tremors, numbing of the extremities, paralysis, blindness, convulsions, as well as reducing immunities to other illnesses such as malaria and is potentially fatal (Hilson & Pardie 2006:108,111; Hinton, Veiga & Veiga 2003:109). With the exception of the gold dealer who was interested in the smaller retort (see 6.4), none of the miners interviewed exhibited such symptoms, yet all were aware of the dangers of mercury as shown above.

The elimination of mercury through the Convention is a world-wide response to these global concerns over the increasing use and subsequent environmental impacts of mercury within the artisanal gold mining sector. This section has made a case for a holistic response to deal with the ease and ubiquity of its use in the situation, and the next subsection investigates this approach within development theory.

6.2.7 Holism in development

The endemic use of mercury, the inability to find a ‘silver bullet’ solution, and the global data above indicates why the quest for its reduction and elimination should continue. Regarding artisanal mining, Luke Danielson has called for a holistic approach looking ‘at the social, economic, and governance issues in this part of the minerals

sector, alongside the environmental concerns' (Danielson 2003:98). Chapter Five has examined the second of these issues, economics as a key to understanding the ongoing use of mercury in this sector.

Accordingly, does heeding this call require the critical holism described by Nederveen Pieterse? Although critical holism is a programmatic approach to development, the program cannot be limited to developing, commissioning, and handing over mercury-free technology, however appropriate. One of the approaches to development, championed by Amartya Sen, is that it should be focussed on enhancing people's capacities to make reasonable choices (1999). Referring to artisanal gold miners in Tanzania, Bryceson and Bosse Jønsson observe: 'The autotelic journey of becoming self-made miners, takes place largely independent of government, NGOs, aid agencies and other developmental institutions. But the journey is a social rather than solitary experience' (2014:8). Neither interventionist (on my part), nor autotelic (on the part of miners) approaches will change the situation regarding the present use of mercury. Sen's approach calls for a transition in thinking which goes beyond change in the situation, as William Bridges explains:

Change is situational. Transition, on the other hand, is psychological. It is not those events, but rather the inner reorientation and self-redefinition that you have to go through in order to incorporate any of those changes into your life. Without a transition, a change is just a rearrangement of the furniture. Unless transition happens, the change won't work, because it doesn't 'take.' (2004:xii)²²

This transition is necessary, if according to Nederveen Pieterse, actors and agencies in the global South are expected to shape their own paths without mimicking others in following a single forward path or development model (2010:209–10). While the search has been for interventions toward change in the miners' use of mercury, here a call is made for a modified autotelic (self-purposed) approach. If the means of achieving environmental justice in the situation require levels of investment in mercury-free

²² Quoted by Mark Brickman (2018:92).

processing plant and equipment which amount to tens of thousands of dollars, then a transition is required. It does not refer to the lack of choices with respect to mercury use, where transition versus change is presently moot, but to enterprise and partnerships, in spite of the shortcomings described in the first section. Thus critical holistic approaches should include both whole (all those involved) and holism (all the programmatic dimensions of development).

6.2.8 Summarising responses to the impacts of mercury

This section has followed Stage Two of the PT&QR model, here analysing responses to the environmental impacts arising from the emissions (vapourisation) into the atmosphere, and releases (particles of mercury, not amalgamated with gold) into local water systems.

These responses were by Christian miners and other agencies intervening in the situation e.g. EWAD; the academic research community; and international supra-governmental bodies such as UNEP. These all pointed to increases, not decreases, in the use of mercury within artisanal gold mining, with attendant local and global concerns. Bearing in mind the concern that mercury-use within artisanal gold mining is a wicked problem, finally, analyses of development itself by theorists, have led to concepts of holism and holistic approaches.

In Chapter Two, secular theorists warranted religion and faith-based approaches to ‘whole’ and ‘holism’ in development; and the next section turns to reflect theologically on the values, motivations, and vocation of creation care and stewardship.

6.3 Theological Reflection

Continuing ‘the critical conversation that is practical theology’ (2016:85) the third stage of Swinton and Mowat’s analytical model is now reached. The literature review noted the importance of wholeness, holistic and ecology to the thesis because they link values and religion to environmental concerns within artisanal gold mining. The following section situates whole and holistic approaches to change within a cosmic view, linking mercury in mining with religious values such as justice for the poor, under the Christian God. Theologians are brought to reflect both on the situation observed and on knowledge gained through global research regarding mercury and the environment.

Remembering that qualitative research alone ‘tells us nothing about the meaning of life, the nature of God ... or the purpose of the universe’ (Swinton & Mowat 2016:85), this section follows Swinton and Mowat’s third stage, that of theological reflection. It reflects on creation care under the God of shalom; how shalom can be promoted in the situation, not just for the human community, but for all species. This expanded concept of shalom is now under consideration, in addition to the previously discussed concepts of *mishpâṭ/sidiq* and *chesed*.

6.3.1 A theology of shalom

The connection between holism, shalom, and God has been recognised: ‘The Bible is essentially holistic. Creation itself, the Hebrew concept of *shalom* and all that is revealed, implies an integrated, interconnected synergy of the whole that God himself epitomises’ (Gnanakan 2016:290). Celia Deane-Drummond perceives that:

One fundamental Christian basis ... lies in a deeper appreciation of the Trinitarian life of God. God as fully incarnate in Christ confirms the material worth of creation. The close communion between Father and Son and Spirit shows how we become closer to God through sharing in the dynamic relationships of the Trinity. (1996:145)

She continues ‘that this *shalom* ... is a state of being where we are in communion with God, other human beings and nature’ (Deane-Drummond 1996:146). Similarly,

Wolterstorff described shalom as flourishing ‘in all one's relationships - with God, with one's fellow human beings, with the non-human creation, with oneself’ (1995:19–20). Jonathan Moo believes that when the cosmic breadth of the Christian hope is taken seriously, ‘the scope of our love and of our ethics extends beyond our fellow human creatures to embrace all of God's creation’ (2016:39). Dale Brown argues, ‘the church is engaged in shalom business when it embraces any manifestation of the Spirit which brings persons into right relationships with God, others, and God's good creation’ (1995:655). Their lists are reminiscent of Nederveen Pieterse (above), as seeking an encompassing holism of macroeconomic management, cultural development and a planetary ecology that is not anthropocentrically focussed (2010:164). Yet, Paul Hiebert is clear, ‘Holism is not more sophisticated methods by which we do God's work. It is rooted in the awareness that these ministries are God's work, and that with his call to service he gives strength and fruit’ (1995:143). James Jones argues that ‘The Bible presents us with a mission of God that is holistic, i.e. spiritual and physical, personal and social, individual and corporate’ (2003:89). He goes further, stating that:

The doing of God's will on earth as it is done in heaven requires us to challenge unjust structures, political and economic, and to insist on fair trade and sustainable methods of food and fuel production. The earthing of heaven requires it. (Jones 2003:34)

It is interesting that fair trade is included in a list promoting God's will for Christian living. Franciscan mission theologian Bernard Przewozny calls for Christians to develop and implement new models of ‘humankind's relation to the environment and natural resources ... to offset the abuses of a consumer society’ (1991:257). From these, it is claimed that the goal for holism (introduced by secular thinkers above) in Biblical terms, is that artisanal mining communities can work towards, if not yet live in, a state of shalom; all species flourishing *under God*.

6.3.2 Creation and the love of the Trinity

The creation story of Genesis 1 with its emphasis that God saw each stage of the creation as systemically good is about God's loving plan. Donald Hay writes that the 'stress in these passages is on God himself. Thus in Genesis 1, God is referred to no less than thirty-two times in thirty-one verses. The whole of creation begins with God, and is an expression of his will and purpose' (1989:17). Creation is distinguished from nature:

in the Judaeo-Christian tradition, the word "creation" has a broader meaning than "nature", for it has to do with God's loving plan in which every creature has its own value and significance. Nature is usually seen as a system which can be studied, understood and controlled, whereas creation can only be understood as a gift. (Francis 2015:40)

While the natural world can be conceived as existing from the sub-atomic to the edges of the known universe, creation is a cosmological term which includes nature and is bounded by the metaphysical i.e. God outside of creation as gift giver. It is the belief in God as Creator that accords the gift of nature with intrinsic value (Deane-Drummond 1996:70). Here is the Divine acting to create an ecologically sustainable bio-sphere culminating in the creation of humanity, then offering this creation as a gift to humankind 'as part of, yet distinct from, the rest of the created order' (Hay 1989:14).

This distinction arises from the idea of humankind being made in the image of God, which puts us in a unique relationship with God, when compared with other creatures; and 'gives us a special *responsibility* to act as stewards or caretakers of creation' (Deane-Drummond 1996:73). Francis similarly speaks of the unique worth of human beings and the tremendous responsibilities this entails (Francis 2015:46). Hay notes that believers are accountable to God for their stewardship (1989:73), and that when man is given dominion over the created order (Genesis 1:26) this is an important role. It implies that man is God's vice-gerent and steward; and the language used here 'speaks of respect for nature, and an obligation to care for it.' (1989:19). Serah Wambua of CMS-Africa believes, 'God has provided the resources necessary for everyone to experience *shalom* or peace in all their relations including with the environment'

(2016:256). However, as the previous two sections of this chapter have shown, this stewardship has not been successful.

Ulrich Duchrow and Gerhard Liedke, as two theologians concerned for shalom and creation, express how:

It is astonishing that God so loves this creation that he does not let it perish, but patiently gives it his loving care. The suffering of creation would otherwise, like the suffering of humanity, be hopeless and pointless if God were to persist in being only a distant onlooker of the suffering. We believe – and that is the heart of the gospel – that it is otherwise. We believe that God descended to the lowest depths of creation in the cross of Jesus Christ ...because Christ suffers with the suffering of all creation. ...It is in pure love and faithfulness to creation that God endures the deepest suffering of creation in the cross of Jesus Christ. (1989:52)

Certainly the Apostle Paul links the suffering of creation with Christian hope in Romans 8:18-28, a hope that believers will be revealed as co-redeemers with the Holy Spirit. Wambua argues the church should be facilitating *shalom* through sustainable stewarding of the environment, in fact she tellingly maintains, that the ‘only institution charged with facilitation of reconciliation and attainment of *shalom* is the church (2 Corinthians 5:17-20)’ (2016:257). Also addressing Christians, Przewozny claims ‘How we understand our relation to the world will depend on our self-understanding; and how we understand our stewardship over all creatures will depend on our self-mastery’ (2003:34). Jones leaves no illusion regarding our response to this gift of creation:

To desecrate the earth and despoil the soil is not just a crime against humanity, it is a blasphemy, for it is to undo the creative and redemptive work of God in Christ. All things came into being not for us but for him. That is the testimony of scripture. This is the grand and divine ‘plan for the fullness of time, to gather up all things in him, things in heaven and things on earth’ (Ephesians 1.10). (2003:64)

Global concerns, e.g. over the use of mercury are linked here to blasphemy, which is possibly reason enough to motivate Christian involvement to care for creation.

6.3.3 Caring for creation

In his Encyclical Letter, Pope Francis explicitly addresses this concern, ‘the export of raw materials to satisfy markets in the industrialized north has caused harm locally, as for example in mercury pollution in gold mining’ (Francis 2015:28). That the question of mercury pollution and gold mining has come to the attention of the Pope is a

surprising finding and certainly adds gravitas to the need for its mitigation but he takes these matters further into the quest for justice. He also links creation care with justice through a conviction that ‘everything is interconnected, and that genuine care for our own lives and our relationships with nature is inseparable from fraternity, justice and faithfulness to others’ (2015:37). He goes on to argue ‘that a true ecological approach always becomes a social approach: it must integrate questions of justice in debates on the environment, so as to hear *both the cry of the earth and the cry of the poor*’ (2015:27). Francis rallying cry is ‘the God who created the universe out of nothing can also intervene in this world and overcome every form of evil. Injustice is not invincible’ (2015:39) and these last four words remain encouraging after the problems in the artisanal sector (catalogued throughout the thesis) which preface them.

Wambua notes, ‘Since the environment transcends geographical boundaries, it was intended to benefit everyone in the present—as well as the future generations who need the same resources (2016:257). William Holden and Daniel Jacobson who have studied ecclesial opposition to mining in the Philippines note the same points. They quote Catholic theologians, Gustavo Gutierrez and Leonardo Boff, who argue that stewardship is concerned with the right of future generations to inherit a conserved Earth and a healthy biosphere. The second concern, integrity of creation, incorporates ecology into decision-making. For example in the Philippines, three-quarters of the poor engage in subsistence agriculture or aquaculture as a way of providing livelihoods for themselves and ‘should there be a mining-related environmental disruption, these people would be thrust from subsistence into destitution’ (Holden & Jacobson 2007:142). In summary, creation care applies to the flourishing of all species in the vicinity and stewardship of the natural world is aimed at the inheritance of the next generation.

The extension to creation care and the flourishing of all species; and to stewardship of the Earth for future generations, allows John Davies to make his call:

The proper work of Jesus, and of all who are called by him, is the fulfilment of the will and purpose of God. This includes the whole concern for renewing, reconciling, healing the world in all its sectors and communities. It includes the responsible use of the whole range of human abilities and powers, economic and spiritual, political and physical. This is the proper meaning of Christian ‘vocation.’ (Davies 2001:126)

The vocation of artisanal gold mining can indeed be concerned for the flourishing of all species within the vicinity, using the range of abilities and powers available. ‘It is because Christians are committed in obedient gratitude to work for the renewal of the earthly community that they will render their obedience in such ordinary earthly occupations as tailor, merchant, and farmer’ (Wolterstorff 1980:19) to which the ordinary occupation of earth-bound miner may be added. Fulfilling one’s vocation is not in addition to the gospel, ‘For to proclaim the gospel that says “Jesus is Lord” is to proclaim the gospel that includes the earth, since Christ’s Lordship is over all creation. Creation care is thus a gospel issue within the Lordship of Christ’ (The Lausanne Movement 2011:19). Theologies aimed at practice, such as these, motivate creation care within the context of artisanal gold mining, towards eliminating the use of mercury and the flourishing of all species.

6.3.4 Summarising reflections on creation care

The ‘oughts’ reflected upon here, have provided insight into the stewardship and care of creation, with the broad intentions of walking in God’s ‘ways’ (Psalm 81:13 NASB). A theologically informed critical holism allowed the impasses to be placed within a cosmic perspective, linking mercury in mining with religious values such as justice for both the poor and the environment. This Biblical commitment links more faithful environmental practices to theologies of shalom, as a purpose of the Christian God. Francis believes that injustice is not invincible (2015:39) and this means that artisanal

mining communities can work towards, if not yet live in, a state of shalom, where all species can flourish under God.

The vocation of gold mining, when seen theologically, goes beyond an economic livelihood for human communities, towards the flourishing of all species in the vicinity. Therefore, creation care will not be realised in the situation without the reduction and elimination of mercury, even though the previous chapter, and the sections above, did not shed light on any easy ways forward for financing and sustaining mercury free processing. However, the chapter has argued for a transition to more faithful environmental stewardship practices by both Sides A and B, and the following section records some provisional, practical formulations, attempted through my vocation as a Christian mining engineer.

6.4 Formulating Revised Practices

This fourth section of the chapter is similar to those in the previous two chapters and is concerned with action, however provisional, to facilitate change. Swinton and Mowat clearly state:

The mode of action that is engaged in by the practical theologian is therefore seen to be *mediative*, seeking to mediate between the practices of the Christian faith and the practices of the world. Action, within the horizon of the practical theologian, is never action for action's sake, but always action in the service of revelation and mediation. (2016:263)

Their model is cyclical or iterative, and the next three subsections detail three actions commenced in the situation towards mitigating the impacts of mercury on the local environment, through its reduction or elimination (as discussed in 6.1 and 6.2). These are the introduction of an appropriate ore concentrator, the aforementioned GoldKacha; the initial work towards a fully mercury-free ore processing system; and the stalled development of a locally manufactured mercury retort.

While there are theological inducements for more faithful practices, the obvious question, when considering re-orientating approaches to the use of mercury within the environment, is to ask whether it is the sole responsibility of Side B or whether Side A is also involved in stewardship for all creatures. The project is not desirous of simply switching the source of prescriptions from EFT standards to theological expectations, thereby increasing the burden of Christian miners, who are already aware of these Biblical concepts. Instead it seeks to follow the Convention's plans to reduce and eliminate the use of mercury by Side B through the development of alternative processing methods by both Sides, as honouring the Biblical mandate to care for the gift of creation.

6.4.1 Step One towards a mercury-free system in Uganda

The Convention seeks the reduced use of mercury until it can be eliminated and this subsection records my first steps towards this objective, with regards to the ore concentrating process.

The miners' activity of sluicing was described in 6.1.2: hessian sacking stretched out like a blanket in a simple inclined shallow trough over which water and the muddy gold ores flow. The heavier particles including gold sink and are trapped in the sacking while the lighter crushed rock, soils or tailings flow out the lower end of the trough into a pond of some kind. Water from the pond is immediately recycled and the tailings are later retreated to extract remaining gold as the system is inefficient, as well as labour intensive. The GoldKacha is a technology that replaces sluicing although it still requires water and some labour but most importantly it depends on electricity, supplied from either the national grid or a generator. As has been noted above, it is both more efficient in concentrating ores and removing gold from tailings as well as saving labour and time. It was tested as an integral part of a mercury-free process, however the subsequent processes of panning, amalgaming and burning off the mercury are not replaced by it, so further equipment is needed to for the process to completely eliminate mercury.

In April 2012, work was done in Zimbabwe investigating the GoldKacha to establish its suitability as part of a mercury free process for artisanal miners to become eligible for the ecological premium discussed above (Appendix Two: Section Two). These trials were successful and during June 2014 I attended an East African regional meeting held by Fairtrade Foundation in Geita, Tanzania where I hoped to have a GK brought and demonstrated. Due to logistical problems it was unavailable and instead the local marketing agency showed a number of short videos of the equipment in use elsewhere in Tanzania (Garde 2014). Immediate interest was shown by all present and a GK was eventually purchased through the CRED Foundation and delivered to an ASMO near

Busia, Uganda which, in April 2016, I commissioned, demonstrated and left for them to use. The next year, I returned to test two more items of equipment (a gold particle separator and a smelter) that would make the process fully mercury free (detailed in

6.4.2). During a group session while there in 2017, I learned more about their GK use:

Margaret: 'The GoldKacha is very, very good, it is very fast and also it reduces mercury because you don't use mercury at all until after the GoldKacha then what you are using is very little compared to what you used before. If you get the powder straight from the crusher then you add water and mercury and then you mix (panning in the basin), in this process more mercury is used than when you do it after the GoldKacha. Also I think that the more you pan the more weight the gold loses; (in other words) if you start with the GoldKacha concentrates, you put in little mercury and then you pan what you get is heavier than when you pan everything at the same time (less gold losses). (Ongura 2017)

It was not surprising to hear that more gold was recovered through mechanical concentrating; it was a surprise to hear that less mercury was consumed in the subsequent panning of the concentrate. She continued:

Margaret: 'There is no chance of the GoldKacha leaving gold behind in the sand you don't find any gold remaining in it. The GoldKacha gets all the gold and takes it down so that the tailings have nothing, they don't have gold at all. When we are pouring (sluicing) the sand it still has gold, but the GoldKacha remaining does not have gold and most people now believe that the GoldKacha washes and clears all gold from the tailings. We are really happy to think that God has thought about them, it is a wonder.' All: laugh. (Ongura 2017).

Not only was more gold recovered, but the users believe the concentrator removed all the gold in one pass through the device; that the tailings were now barren and of no further commercial value. I commented:

Terry: Excellent. This is a blessing to me. We already knew it was going to help the women ... What we did not realise is that the GoldKacha is removing all of the gold and that it is reducing mercury. (Ongura 2017)

Tom Wamalwa added 'the GoldKacha has simplified the washing of gold, you can wash within one hour a vehicle load. It would take one hour to wash a basin but now a basin takes a minute!' (Wamalwa 2017a). The GK remains in regular use and others have been bought or donated both in Busia and Migori as standalone labour-saving technology (Read 2019b). But there are still two problems with its use in artisanal gold mining.

The first problem is its cost. In November 2016, the price from the manufacturer in South Africa was quoted at US\$2650 before the costs of freight to the customer (APT

2016). The evidence in the previous chapter results in a claim that this is too expensive for the presently under-capitalized sector. It will take donors to provide or businesses to invest in such equipment towards mercury free processes.

Secondly, the Convention (2013a:59) has an expectation that mercury will be removed from tailings before further chemical treatment (such as with cyanide), but GoldKachas have been used to retreat tailings already contaminated by mercury with subsequent dumping into undifferentiated piles. Once the free gold is removed, these piles of tailings will be typically sold for cyanide treatment, and this next chemical process is likely to further exacerbate eventual pollution by complex mercury molecules that may leach naturally from these tailings in the future.

In conclusion, as a step towards assembling a mercury-free processing plant, the GK has been a qualified success.

6.4.2 Step Two towards a mercury free system in Uganda

This subsection investigates the next step towards a completely mercury-free system, with the GK intended to be a part of the processing technology.

In February 2017 I tested further equipment and processes towards this fully mercury-free system, at the SAMA location near Busia in Uganda. In addition to the GK, taken the year before; a GoldKonka sluice; a magnet (to remove iron contamination); borax chemical powder; and a small electrically powered smelter were brought to the site. Once the pulverised ore had been treated by the GK, the concentrate slurry was passed over a commercially manufactured sluice, lined with efficient trapping materials, to improve recoveries of gold particles. This increased efficiency also traps iron particles liberated from the steel balls during milling (they shrink with use and need to be replaced) and the magnet was used to pull the iron out of the final concentrates. The concentrates from the GoldKonka were panned, as before, but this

time without mercury, as pictured in Appendix Two Section Two. The concentrates from panning were smelted in one of two ways. Firstly, mixing the final concentrates with borax and heating the mixture with oxy-acetylene blow torches to produce a saleable bead of gold, which needed more skill than Read (another mining engineer who accompanied me, then working for the Facility) and I could master. In our experiment, attempting to follow Youtube instructions,²³ we failed to produce a decent bead; although the gravity-borax method is reported to work elsewhere (Appel & Bosse Jønsson 2010; Appel & Na-Oy 2012; Steckling et al. 2014; Køster-Rasmussen et al. 2015).

The second system required heating the same mixture in an electric smelter; small enough to use power supplied by a generator, and with a crucible small enough to match the low mass of gold/ borax mixture. This experiment worked and a ten gram bead of gold was produced for sale, the first mercury-free artisanal gold ever produced in Uganda. However, the smelter broke down on the second attempt (after our departure) to use it and the system has not been commissioned to date. In conclusion, my efforts at assembling a mercury-free processing plant for any ASMOs in East Africa have not been fruitful so far, although the GK has been successfully accepted by miners.

Yet the two-fold expectations of Fairtrade remain; firstly, to eliminate mercury through efforts such as my own in 2017, testing a ‘Heath Robinson’ style of assembling a system with minimum imported, costly technology. Secondly, to generate exportable quantities of a half to one kilogram of gold at a time, to ethical traders or jewellers in Europe, in order for the miners to benefit economically. However, in order to achieve both objectives, a plant such as the 2-kg Model will cost USD 80000 (UNEP Global Mercury Partnership 2017:89); or my 2012 budget for a plant, which came out at the same cost in USD or £71000 at the time. The previous chapter argued that commutative

²³ <https://www.youtube.com/watch?v=B28dTncIrJw> accessed January 2017

justice alone cannot assist the miners to raise the working capital required to accumulate exportable quantities of gold; nor will it finance the equipment capital to acquire improved mining and mercury-free processing equipment.

The alternative is outside investment, but bearing in mind the minimum payment to the miners of 95% of the LBMA fix for the pure content (Fairtrade Foundation 2013:65), and other running costs of such a plant, my spreadsheet calculations showed that the financial return on such a capital investment could be no more than 7% over three years (Garde 2012). This reduces the likelihood of attracting finances, and the similar, pioneering SMC intervention,²⁴ as a means to mitigate the environmental impacts of mercury and improve the economic livelihood for artisanal miners through generating exportable quantities of gold, ultimately failed to be sustainable. All of this requires the search for another way forward, outside of the expectations noted so far.

Instead of repeating the ‘2-kg Model’ approach using large, stationary, expensive equipment, the practical care for creation that is envisaged for this situation would continue to follow the decentralised model proposed in Chapter Five. Easily transportable, gravity-concentrator equipment i.e. GoldKachas, GoldKonkas, shaking tables; can be mounted on trailers and towed by motorcycles or tractors, to mining sites and set up temporarily. After concentrating, the gold particles can be smelted using the borax method, once the technicians are competent to use it; thus utilising the gravity-borax method of mercury-free processing. Small smelters (similar to the one tested in Uganda) can be set up in secure sites to re-melt and further purify these beads into ingots for export. An additional outlay USD 10 – 15 000 by local entrepreneurs (such as Asembo) should suffice to implement such mercury-free processing (Valerio 2020), without going into debt, and allow them a realistic return on investment. The full costs

²⁴ Based on the above findings by the research community regarding the SMC, it is highly unlikely that the Fair Gold Development Company would have succeeded in Kenya without more forethought regarding the ends and means of management and ownership of the facility.

of exporting and transporting will have to be paid by ethical customers (or authorised gold traders) concerned for the environment and for fair trade. In this way, the financial pitfalls outlined in Chapter Five should be avoided.

While this system will begin to fulfil the Convention's quest to eliminate mercury within artisanal gold processing, it is not likely to reach the standards and criteria for certifying ASMOs. In the event that extra financial rewards are earned, extra monies can be spent on community projects such as orphanages or clinics, as visited during my field work in East Africa.

6.4.3 Towards the local manufacture of a retort

Local efforts towards manufacturing a mercury retort, as my third intervention, are now discussed. In November 2014, Duncan Onyango, an owner of a small engineering business in Masara, and I assembled a much smaller retort from scrap brake cylinders and attached brake fluid pipes taken off dismantled vehicles. Their size (about that of an egg) and the ready-made attachment of the pipe through the lid of the cylinder were suitable for the small (say one to five grams) balls of amalgam resulting from the panning observed. Onyango was also developing a super-heated fire using a fan powered by a bicycle pedal and chain to push extra air into the base of the fire in a container to help a gold dealer friend of his who wanted to stop blowing onto the flames from close up. The friend was already showing signs of mercury poisoning and believed standing further away and not breathing deeply to blow air would slow down the illness. The system was tested on very small beads of amalgam (less than half a gram) and onlookers commented that the smell of mercury was gone, therefore no fumes were emitted, but no mercury was recovered, either from the pipe or a small beaker of water

into which the lower open end had been immersed.²⁵ During the focus group held on 5th December 2014, Onyango commented that we could not recover the mercury, but that by putting the tube into water the ‘choking smell’ was gone, and that even the small ‘amount of gold that is being burnt can be recovered.’ He said that through our ‘modification we had a very good result’ (MICA 2014). However, when I asked about progress on returning to Masara in July 2015, Onyango said he had been too busy to work on it (Onyango 2015) and the matter was left there.

6.4.4 Assessing practical interventions to date

Bryant Myers has observed, ‘If we are unwilling to view the world from the community's perspective, and begin from there, then we are top-down development practitioners after all’ (1999:141); and this section has tried to view alternatives to mercury-free processing from the user’s perspective, while retaining the global perspective.

Side A seeks firstly, educating awareness of the dangers of mercury, secondly reducing its use (and impacts) and thirdly, eliminating its use entirely. With the exception of the first action (by others), the other two interventions have not yet proved to be sustainable, whether elsewhere in the world or by me in this situation. Bearing in mind the ordinary livelihood theologies, ethics and practices of Side B; and in agreement with Fairtrade Foundation and the CRED Foundation, practical research into assisting with implementing these intentions was initiated by me and its results were described and their results evaluated.

According to the informants, only the Goldkacha was found to be a practical replacement for sluicing, removing all freely accessible gold and reducing the consumption of mercury, which ties in with Mondlane and Shoko’s finding of the

²⁵ It is likely that the very small amounts of vapourised mercury initially deposited upon and coated the interior iron surfaces of the retort pipe.

inverse ratio between gold and mercury in enriched amalgam. However, the testing of a fully mercury-free process; raising the investment required for such equipment within a centralised processing plant (through the Fair Gold Development Company); and locally engineering an appropriate retort have not borne sustainable results. None of this empirical evidence will come as a surprise to the academic research community, as conversation partners, who continually observe the difficulties with such interventions within the artisanal gold mining sector.

This section, though, has offered glimpses for how returning to East Africa and continuing practical research can be effected. The keys to appropriate equipment are transportability, quickly paid for, robust, easily operated and maintained, and readily available. These factors contrast with those in 6.2.4, where it was noted that four major reasons for the lack of retort use were that they were too expensive, unavailable, inefficient and inconvenient. Using the information gained already, further pilot schemes will need to be tested, using funding raised by an NGO dedicated to mercury free mining; such as those presently in existence,²⁶ or a new faith based organisation under the umbrella of Mining God's Way as mission.

²⁶ E.g. <https://www.mercuryfreemining.org/> accessed January 2020

Chapter Conclusion

The chapter has continued to reflect on the intentions, means, and ends of justice, here with respect to the environment through the reduction and elimination of mercury used in AGM. The ease and ubiquity of mercury use in the situation has been shown, but there are global concerns over its increasing use and subsequent environmental impacts within the artisanal gold mining sector. As in the previous two thematic chapters, the critical conversation over environmental concerns followed the four stages of practical theology. These include analysing the situation through the ordinary theologies articulated by miners, and reflecting on the situation through the biblical concepts of creation care and shalom, expressed by Western text-based theologians.

The intention of Christian artisanal gold miners in East Africa is to please the Creator, and the means they have adopted in Uganda is to follow the lead of EWAD (for whom they have the utmost respect), and they have also followed my lead in using the GoldKacha. To meet their concerns in the present situation, the practical ends are to reduce mercury use and reduce exposure to its harmful effects.

On the other hand, the intentions of Side A, represented here by UNEP's Convention and other EFT standards and criteria are, in colloquial English, to save the planet. Their global means seek compliance to national action plans and legislation, and to encourage ASMOs to benefit from such rewards as the eco-premium. The ends of the Convention are clear, to ban the production and use of mercury in order to stop emissions into the atmosphere and releases into the environment; the Convention seeks the end of mercury use, as soon as practicable.

A lack of progress towards this end was found; which meant further conversation partners, including the artisanal mining research community and development theorists were brought to analyse the situation. Unfortunately, their research revealed a complex

situation, with regards mercury use on a world-wide basis; resulting in a suggestion to approach the impasses holistically.

When theologians were brought to reflect on the situation, they expanded secular concepts of holism into Biblical concepts of shalom as the flourishing of all species in the vicinity. They maintained the intention of the Christian God was to provide a good creation for all species to flourish; the means chosen were to delegate its stewardship to humankind; and the end is shalom for all creation. However, the promotion of shalom is a unique concern of the church; so any hopes of another *laissez faire, laissez passer* attitude to mercury use were annulled. Reflective theologians expect that work (within one's vocation) continues towards environmental justice, creation care and stewardship of the Earth, as the most encompassing end of justice under God.

The vocation of artisanal gold mining in East Africa (whether as an economic livelihood; as mining engineering; or as a business enterprise requiring investment), is to heed all these calls for mercury-free gold ore processing. An initial approach to reducing the use of mercury, through the GoldKacha, has been partially successful in Uganda. This has led to a holistic understanding that promoting sustainable environmental justice will be best pursued through the development of economically viable technology, with minimum bother on the part of its users. Ultimately the means to environmental justice (stewardship and creation care) are economic and there needs to be further technical research into mobile, cheap, robust, maintainable, and available, alternatives to the use of mercury in miners' present economic livelihood practices. Certain efforts were made by me, during the course of the research project, to test such technology, but while they did not prove sustainable thus far, this collective learning is important to overcome impasses in further reducing and eliminating mercury use by miners in East Africa.

The call to the church for shalom goes beyond the economic flourishing of the community; although, the economic situation outlined in the previous chapter results in the argument that there can be no environmental justice, no flourishing of all species, nor shalom without an economic commitment by those who would see justice in the situation.

The thesis investigates three dimensions of justice, namely social, economic and environmental justice, in order to define a meaning of an encompassing mineral resource justice under God, which is the subject of Chapter Seven. It also investigates how just resource development might be approached, as a contribution to the academic discourse in ASM development theory. This chapter contributes to the quest for understanding just resource development; it has done this by addressing the thesis sub-question which asked how formulating new faithful practices in the use of mercury can allow the promotion of environmental justice.

Chapter Seven

‘Picha Maber’: Towards mineral resource justice

Introduction

One of the MICA executive committee, George Odhiambo mentioned that they ‘wish to put artisanal gold mining into a good light’ and he used the expression that titles this chapter ‘Picha Maber’¹ (Odhiambo 2014b), a colloquial Luo expression meaning ‘pictured right.’ This chapter summarises the previous chapters and goes on to propose Christian approaches towards putting the sector into a good light.

Father Jacob mentioned that, according to some local miners, ‘the gold is cursed’ (2011) and other Kenyan researchers noted:

miners commonly associate the wealth derived from gold with a number of myths. For example, they believe that gold money is “haunted”, and, if invested in any business, will inflict bankruptcy and eventual poverty among investors. However, in isolated cases, individuals have managed to save and invest “gold money” successfully. A more effective summation of the situation is as follows: because artisanal miners generally do not plan and lack budgets, most simply spend profits recklessly. (Mitullah et al. 2003:288–9)

These allegedly supernatural and behavioural undertones in the situation are the opposite of being ‘pictured right’; and this final thematic chapter investigates appropriate intentions, means, and ends of justice under God to transform the situation.

The three thematic chapters dealt with diverse topics. Elements of social justice were revealed by informants in Uganda in the context of understanding the role of a just God in their daily gold mining livelihoods. Aspects of economic justice were examined through the ethical expectations of an ASMO in Kenya discussing the development of their gold resource. Environmental justice was investigated through my efforts to mitigate the impacts of mercury released into the environment by artisanal gold miners. Now, the responses, views and aspirations of Sides A and B and the difficulties or impasses encountered in promoting these dimensions of justice are summarised in 7.1,

¹ Translatable as ‘picha – (Swahili) pictures (pl.)’ (Odaga 2005b:285) and ‘maber - good’ (Odaga 2005a:187) i.e. rightly pictured or in a good light.

under the rubric of just resource development, which since Chapter Two has represented the means of development, sought for in the thesis.

Then overtly faith-based or theological perspectives will be brought to the discussion; in 7.2, these means are investigated through holistic Christian mission approaches. In 7.3, the quest is for the divine wisdom that is required for a just approach to mineral resource development. In 7.4, the three dimensions of social, economic and environmental justice (explored in the preceding chapters), are brought together in an explicitly Christian theological framework. Then, based on the preceding evidence, claims and arguments, the thesis culminates in a definition of mineral resource justice under God.

I argue for understanding mining God's way in terms of intentions, means and ends. Firstly, its intentions are to please a just God; to 'walk' in the ways, characteristics, and purposes, of the Christian God. Secondly, the means of mining God's way are to 'do' justice through just resource development, using Christian missional approaches. Thirdly, the ends of mining God's way are to emplace an agreed-upon, appropriate, mineral resource justice within the situation. This understanding is my contribution to ASM development theory; and it guides the formulation of practical theologies, leading to more faithful practices within the miners' livelihoods.

7.1 Just Resource Development

Both the literature (secular and theological) and the field findings have been brought together in critical conversations to illuminate the intentions, means and ends of an appropriate justice under God, for this sector.

As Side B, Christian artisanal gold miners in East Africa articulated their faith within the dimension of social justice, seeking to balance God, gold and community behaviour in a triangle of ethics. It is believed that a proximate God is influenced by the positive or negative acts performed by members of the local community, especially the profligate behaviour of male miners. It is feared that such sinful behaviour can affect the presence of gold; that is the deposits of the precious metal are seen as dynamic in experiential time, as opposed to geological time. Any intervention to improve community social justice is therefore welcome, if it does not contradict these miners' ordinary theologies.

In the dimension of economic justice, they clearly believed the hand of God was behind fair trade initiatives, bringing the plight of the miners to the consciences of Western consumers and prompting institutions or individuals to act on their behalf. For example, although Valerio is generally motivated towards 'an economically just process to bring prosperity' because 'the covenant of God is to prosper the land and the people' (Valerio 2018), his presence in Africa at this time is seen as prompted by an active God. This is because exporting through fair trade systems is 'godly,' as opposed to 'mistreating anybody' or supporting middlemen as 'cheats' (Aguttu 2017a). However any increased revenues, brought through the interventions of God, are not to be misspent in sinful behaviour, but in the support of orphans and so on, linking back to social justice. For the Christian miners, there is an important need to practice socio-economic justice, before an involved God who can be influenced by their behaviour.

A similar belief in a proximate God was expressed in understanding my actions with regard to the GoldKacha; that God sought to ease the workload of women miners in particular, by bringing the equipment for their use. The role of the GoldKacha within an overall ambition to provide a mercury-free gold extraction process was also welcome, as they understand how mercury pollution damages God's creation, both its present effects on other species in the vicinity, and for future generations.

On the other hand, Side A have articulated their 'oughts' for justice in the situation. Their main concern in the social dimension is the fair treatment of employees of, or suppliers to, the ASMOs involved. Theirs is a human rights based approach to workplace ethics, with no reference to off-the-job behaviour within the community. Once gold is exported, there is a fair trade premium to be earned, which can be spent on relevant community facilities, resulting from a needs analysis, with this expenditure being fully accounted for.

Side A's hopes for economic justice (the purpose of fairer trading or commutative justice), can only be met once ASMOs attain the auditable standards of ethical policies and practices. Irrespective of which ethical and fair trading organisation, this certification must be awarded before improved revenues can be earned. Such organisations, however, are not authorised to financially invest into ASMOs in order to help them reach exportable quantities of gold, and yet, without this capacity, any possible revenue gains will remain beyond reach.

Side A, including the Government of Kenya and UNEP, have also prescribed standards regarding environmental justice with respect to mitigating the impacts from mercury, e.g. banning its use within artisanal and small-scale gold mining in Kenya. Their intention is to eliminate its use globally, starting with educating awareness of its dangers and seeking ways to reduce its use, inviting me to be involved in this reduction.

However, analyses of the positions held by either Side showed a series of impasses, which can be summarised as a gap in approaches, a lack of overlap where the three dimensions of justice are concerned. EFT organisations expect to deal with organisations of miners, with respect to workers' rights and community projects. They expect to trade gold with financially capable ASMOs and to economically reward the same organisations for producing mercury-free gold. Even though EFT organisational initiatives are welcomed by the miners, expecting improved financial and ethical alternatives to the present situation, viable ASMOs are sorely lacking in East Africa. Unsustainable efforts in capacity building of ASMOs have been underway since mid-2012, using project financing in tranches of three years, firstly through the Foundation, then through the Facility. This lack of success has resulted in the ongoing social, economic and environmental situations or impasses observed, with unmet expectations on both Sides. Side A must work within their institutional remits and limits, and Side B can hardly be held responsible for failing to comply with ethical, fair trade and environmental standards when they lack the resources, or wherewithal, to do so. Instead, other ways forward, towards more faithful practices to transform the situation or overcome the impasses, need to be formulated.

In each of Sections 4.4, 5.4, and 6.4, revised practices were formulated, where the possible practical applications emerged from the specific situations. In those three sections it was argued that were impasses within the particular social, economic and environmental situations. Given the impasses, it is necessary to develop more faithful approaches, formulating theologically practical ways of engaging with the actual situations encountered. In promoting social flourishing, Christian agencies formulating socio-economic development interventions should be aware of the ordinary theologies of miners and enquire into the already-held wellbeing ethics of the miners. It will be through endeavouring to keep the local version of the ethical triangle of God, gold and

community behaviour in balance that shalom will be promoted. Engagements to promote economic flourishing grew out of Valerio's desire to help a fledgling ASMO, taking into account their lack of capital finance, but hopes for financial investment could not overcome MICA's legal constraints, in terms of property rights. Instead, an approach to build production capacity, not through ASMO capability, but through independent, transportable, mining and processing equipment (for sale or hire) has commenced. For example, based on this knowledge, finances for another GoldKacha were raised early in 2020 through a church in Oxford, and the mercury-reducing equipment is destined for the hub based at the Mining God's Way Hotel in Masara, Kenya. The funds were raised on condition the equipment is used as a step towards creation care.

In each particular case (following Hartropp), the means and ends of such justice were formulated within the extant situation and, where possible, initially implemented. In spite of their situational uniqueness, each case was commonly motivated through the intention of pleasing God.

In his understanding of the philosophical hermeneutics of Gadamer, Bernstein argued for a similar approach, using an example of a judge administering in a legal situation. That is 'the judge must interpret and appropriate precedents and law to each new particular situation. It is by virtue of such considered judgement that the meaning of the law and the meaning of the particular case are co-determined' (Bernstein 1983:146). The particular means of just resource development were formulated through the interaction between the elements of the situation and applications of a Christian approach, interpreting Biblical guidance appropriately. It is this reliance on interpreting the requirements and approaches to justice in each situation, which makes philosophical hermeneutics germane to the thesis.

Thus, the means of just resource development require the just treatment of people and their livelihoods (socially responsible, economically fair, caring for creation) within a long term relational setting, according to the Biblically revealed character and purposes of the Christian God (*mishpâṭ/ sidiq, chesed*, shalom and love).

7.2 Christian Mission as Development

Stage Four of the model proposed by Swinton and Mowat, seeks ‘to produce new and challenging forms of practice that enable the initial situation to be transformed into ways that are authentic and faithful’ (2016:92); here are three key concepts (transformation, authentic, and faithful), which require elaboration. These concepts (taken together) should guide the work to be done *in situ*, collaborating with Christian artisanal gold miners in East Africa to further formulate (imagine, design and experiment with) new practices and practical theologies of mining God’s way.

Within the present era’s holistic approach, faith based development organizations gathered momentum under the rubric ‘mission as transformation’ (Bosch 1991; Samuel & Sugden 1999b; Myers 1999). In decades prior to this opening up, Christians such as Wayne Bragg theorized that the gospel was about change, whether material, social or spiritual and that the Biblical word for this was ‘transformation’ (Bragg 1983; Samuel & Sugden 1983). This word was embraced by evangelical mission theologians (Myers 2010:120) and a consultation, held at Wheaton College in June 1983,² believed that the goal of transformation is best described by the biblical vision of the kingdom of God (Samuel & Sugden 1999b:266). Myers went on to argue that holistic transformational development starts with the whole story of the kingdom of God; which includes time, the gospel message, and people within their social systems and environment (1999:134–5). He notes that Christian development theologians such as Vinay Samuel have focussed on evangelical engagement in relief and development efforts, in culture change and in a preferential option for the poor (2010:132–6). Samuel and Sugden further push for a view of development that transforms societal structures to promote the values of God’s kingdom (1999a:194). Finally Ronald Sider opines that development seeks to bring self-sufficiency to individuals, families, and communities through helping them

² <https://www.lausanne.org/content/statement/transformation-the-church-in-response-to-human-need> accessed July 2020.

obtain appropriate tools, skills, and knowledge so they can care for themselves (1993:139–40). Certainly this describes the development approach sought here and supports Pervaiz Sultan’s claim that ‘Development is part of Christian mission’ (Sultan 2001:103). All of the above mission theologians would agree that ‘Social action is that set of activities whose primary goal is improving the physical, socio-economic and political well-being of people through relief, development, and structural change’ (Sider 1993:165). They would also agree, whether the phrases are ‘transformation’ or ‘kingdom Christianity’ that development activities are not fully missional if they do not include proclamation of the gospel. Sider, again, says ‘in evangelism, we address only persons, not social structures because only persons can become disciples of Christ’ (1993:162), so a wider understanding of mission does not separate evangelism from development.

There can be no practice of transformational development that is Christian unless somewhere, in some form, people are hearing the good news of the gospel and being given a chance to respond. How one does this in a sensitive, appropriate, and non-coercive way is also very important. (Myers 1999:88)

It is evangelism that encounters the world of sin and provides good news for its overcoming, as argued in Chapter Four. The miners interviewed see development and mission together, there is no separation, because this approach can deal with sin as a means to justice within their communities under God.

Regarding mission as development, the phrase *missio Dei*, in the words of David Bosch, represented a ‘decisive shift toward understanding mission as *God’s* mission’ (1991:389) i.e. ‘God’s turning to the world in respect of creation, care, redemption and consummation’ (1991:391). He goes on to say this is the ‘deepest source of mission. It is impossible to penetrate deeper still; there is mission because God loves people’ (1991:392). The concept of *missio Dei* ‘was widely accepted by the ecumenical movement in the 1960’s’ (Miyamoto 2007:128) as a world-centric idea of mission. According to Choan-Seng Song, the subject of mission was none other than God, who initiated *missio Dei* in response to the cries for help coming from nations and peoples in

the world (1979:28). At the dawn of the 21st century James Scherer proposed that mission theologians seemed to be in ‘agreement that the kingdom of God, rather than the planting of a universal church, is the goal of the *missio Dei*’ (1999:17). Even though this thinking follows John 3:16, quotes exemplified by ‘*missio Dei* (is) the triune God's commitment to make the world right again’ (Jennings 2015:38) or that ‘God was now understood ...to be engaged actively with the entire world’ (Jennings 2015:41) sound more like straplines than definitions of development. Whilst creation is not left out of the redemption of the world (Deane-Drummond 1996; Jones 2003; Bell & White 2016; Gnanakan 2016) there is still no universal definition of development in mission theologizing. Alongside his lengthy review of both secular and Christian theological discourses (ecumenical and evangelical) on development, and a review of development in the Bible, Sultan concludes that ‘There is no blueprint of development in the Bible as such’ (2001:37). These text-based theologies of mission and development are supported by the ordinary theologies of the miners, who similarly expect a future mission to address justice in their situation.

Without a Biblical blueprint, there is freedom in development, freedom to apply the principles of justice that have been formulated in the foregoing chapters, towards Swinton and Mowat’s oft repeated (in this thesis) ideal of more faithful transformation. John Howard Yoder believes ‘Faithful “transformation” is not an unreachable ideal’ (Yoder 1996:72) because the possibility of obedience does not depend on our human capabilities. Instead it is ‘about the fullness of the humanity of Jesus and the believers’ identity with Him through the Spirit in the church. ... (and the promised enablement) to discover something do-able, which ... need not be perfection’ (1996:72). The idea that authentic faithful transformation need not be perfect in its reach towards the ideal of mineral resource justice under God allows for fallibility. He continues “Transformation” is meaningful and accountable only when those who call for it have a

place to stand' (Yoder 1996:74) and this section of the chapter attempts to position the calling for transformation within a nuanced stance of fallible mission. Referring to Richard Niebuhr's *Christ and Culture* (1951), Yoder's comments on authentic transformation are helpful: 'We therefore need to ask what would be the criteria and the prerequisites, if Christ were authentically to transform culture. Without making these criteria substantially clear, to talk of "transformation" is not so much wrong as empty'(1996:68). The acceptability of including religious figures such as Christ in transformation was allowed when development became holistic; enabling whole, well-being and faith based initiatives (Myers 2010:126).

This missional approach will be contested, as Harry Spaling and Kendra Vander Kooy argue when referring to Farming God's Way (Spaling & Vander Kooy 2019). Adapting their article to suit Mining God's Way, as follows, the approach will be opposed by those who believe in rational and empirical approaches to something as technical as mining. Thus the economic livelihood practices of artisanal gold mining must still be based on engineering and the sciences, including geology and metallurgy, as it has been for millennia. Nevertheless there are religious dimensions to the cultural mind-set of miners in East Africa that may be appealed to, when transforming present social, economic and environmental practices within artisanal mining communities towards becoming more faithful. The challenge is recognise the mutual importance of both faith and gold mining as a livelihood, for the artisanal miners in East Africa.

The concept of mission was noted in the opening paragraph of the thesis where it was used a general description for the work of Christians towards redeeming God's creation. In the sense of mission, as studied in this section, the research has informed Mining God's Way (as an agency of development) on transformative, authentic and faithful approaches to working with Christian artisanal gold miners in East Africa. The first three of four prongs of mission identified in the thesis, follow the three themes of

developing social, economic and environmental justice, where social fulfils the gospel call for evangelism and is the traditional understanding of mission. In spite of the risks, including minimum return on financial investment, the second prong may require a ‘mission as business’ approach, this ‘refers to businesses (often called “Great Commission Companies” or “Kingdom businesses”) that are created and managed specifically for the purpose of advancing the cause of Christ in less-reached and/ or less developed parts of the world’ (Rundle 2009:760). Steve Rundle continues, noting that these are ‘businesses run by a combination of expatriates and locals ... funded by private investors’ (2009:762). The third prong, concerned with creation care and the elimination of mercury, may (paradoxically) need the levels of funding associated with NGOs and corporate social responsibility budgets, in order to develop the appropriate kinds of technology that will suit the miners, without driving them into debt. The fourth prong is educational, the element required to turn artisanal miners into artisan miners; using local mining sites, local technical training colleges, or whatever capacity building opportunities are available. Mining God’s way as mission (a faith-based development initiative) intends to partner with both Sides A and B towards the promotion of shalom in the situation.

However, the fulfilment of these intentions as ends of justice, and selecting the means of development, will require wisdom – divine, practical wisdom, as argued in the next section.

7.3 Elements of Practical Wisdom

Practical wisdom for mining God's way, relies partially on the concepts of critical holism (Tucker 1992; 1996; 1997); intelligent love (Lebret 1965); and development wisdom (Goulet 1971; 1983; 1995) as mentioned in Chapter Two. In the broader pursuit of practical wisdom, under God, the section investigates theologies of Biblical wisdom.

It will be recalled that Tucker's version of critical holism could not be applied directly to development 'because, unlike in health, there is no holistic practice in development ...(yet) it places holistic theorizing and practice ...on the agenda and ...steps can be taken in its general direction' (Nederveen Pieterse 2010:157). Although it was accepted as the theoretical approach to be used, applications to the situation will require love and wisdom. This returns to the exhortations by Francis to use a social love that is 'felt in every action that seeks to build a better world' and is to become the 'constant and highest norm for all activity' (Francis 2015:108); and to Vann for a 'love that is an insatiable desire for justice' (1956:98). As reviewed in Chapter Two, Goulet helpfully labelled this as intelligent love (1995:193); also earlier (in the interests of collective learning), he argued against dispensing with the arduous task of creating new development wisdom that can unify visions while being respectful of cultural and ideological diversity over its meaning (1971:166).

As quoted in Section 3.1, Swinton and Mowat warranted the introduction of wisdom as the aim of practical theology, saying that *phronesis* combines theory and practice into 'an embodied, practical knowledge that will enable a particular form of God-oriented lifestyle' (2016:25). This wisdom, as the Bible says, 'calls aloud in the streets, raises her voice in the public squares. At the head of the noisy streets she cries out, in the gateways of the city she makes her speech' (Proverbs 1:20-21). 'On the heights along the way, where the paths meet she takes her stand... at the entrances she cries aloud' (Proverbs 8: 2-3). In the words of Gerhard von Rad this wisdom is the kind which 'does

not speak in the sanctuary but in the most profane public places' (1972:158)³ such as the hard scramble world of artisanal mining. In order to gain such wisdom, this thesis has reflected on theological approaches to development and as Gustavo Gutierrez claims 'authentic, relevant theology ... (must) attempt to express the word of the Lord in the language of today—in the categories of a particular time and place' (1983:91). Divine sources of practical wisdom are attested to in the Books of Proverbs, James, and Wisdom, and so, according to Vann:

Sapientis est ordinare: it belongs to the wise man to put things in order; it belongs to the man who is wise with the wisdom of the Spirit, the wisdom which is "from above," to put things in their divine order, bringing the entire manifold of creation into unity so that "all things work together for good," but doing so not with the violence of regimentation but with divine reverence and pity for the least of created things; for we are told of the divine wisdom that she "reacheth from end to end mightily," but also that "she ordereth all things sweetly." (1956:176)

Bringing things to work together for good reflects the title of this chapter, except that it is no individual's responsibility to establish a '*picha maber*' (Odhiambo 2014b); instead the work is with believing, thoughtful, Christian artisanal gold miners in East Africa. 'Thus our dialogue ends in gratitude. And with a challenge for each of us: to seek to participate in the grace of authentic transformation, and to give thanks' (Stassen 1996:268) for their ordinary livelihood theologies, ethics and practices, on which this thesis is based.

The use of practical wisdom for transforming the situation in East Africa can allow the wise to set things in order – towards more faithful livelihoods (the intent); towards promoting justice (the ends); conducted in the manner outlined throughout the thesis (the means, i.e. a just approach to development).

³ cited in (Sheppard 1983:131).

7.4 Mineral Resource Justice under God

The last section of the thesis draws all the work done above into a definition of how mineral resource justice under God can be envisaged and defined, as the final thesis contribution to ASM development theory.

A definition of artisanal gold mining was collated in the literature review; it is a people-initiated, self-reliant, labour intensive source of livelihood for individuals or collectives with limited capital investment, using rudimentary techniques for quick cash returns as a form of local wealth creation. It was commented that this contains certain phrases which did not bode well for the development of justice in such situations; and these constraints within different situations, resulted in the contention that mineral resource justice can have no definitive, ahistorical meaning. But this does not mean that is therefore meaningless, or a simply a pragmatic construction, or incapable of meaningful pursuit within a particular situation, as I have demonstrated.

With respect to Side B, environmental justice has been investigated through my initial actions to mitigate the environmental impacts of mercury caused by artisanal gold miners. Aspects of economic justice were examined through the ethical expectations of MICA in Kenya, regarding the development of their gold resource, in collaboration with Valerio. Elements of social justice were revealed by informants in Uganda discussing their theologies of God within their daily gold mining livelihoods. Side A was represented by the standards and criteria of three different EFT organisations, by UNEP's Convention (ratified by all three East African Governments), and by the Mining Act of the Republic of Kenya.

Due to the nature of the impasses between these two Sides, further evaluative (critical) conversation partners were brought to the discussions regarding each of these dimensions of justice. There were six discussants addressing the situation; in sequence these were firstly, the EFTO Standards and Criteria, including the Minimata

Convention. The second group were Christian artisanal gold miners in East Africa. Thirdly, the academic research community concerned with artisanal and small-scale mining. Fourthly, secular theorists concerned with development. The fifth were theologians writing about the three subjects under discussion. Sixth and finally, theologies of the character and purposes of God, allowing for further reflection on the situation.

Following Strauss and Corbin's axial coding method (1998:123–42), these can be seen as six subdivisions of a systematic approach, and if sorted into increasingly abstract higher orders of concepts (1998:113), they culminate in theologies of the character and purposes of the Christian God. Expressed diagrammatically, the figure shows the three dimensions as axes of justice, converging through these six levels of increasing abstraction, into the encompassing theologies of God's character and purposes:

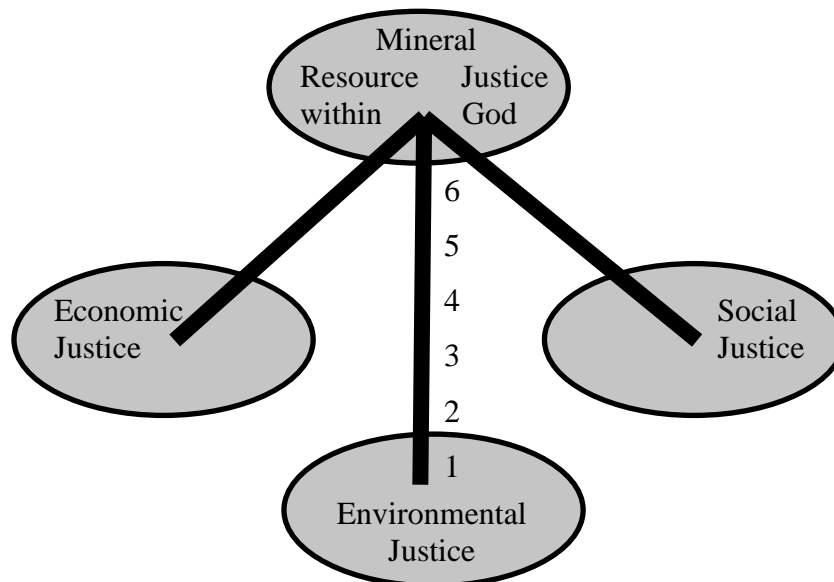


Figure Two: Axes of Justice

Yet, the encompassing concept of such justice under God is not an overlap of justices viewed within a theological frame, but it can be interpreted as a fusion, a new entity, of mineral resource justice within God. Christian Smith supplies a useful analogy discussing the wetness of water, which is an irreducible, emergent property of an entity

existing at one level as a result of the interactions of other entities (hydrogen and oxygen) existing at a lower level. Wetness is not a property of these constituent entities but of water, yet the liquid cannot survive in their absence (2010:453). A Holy God concerned for a whole situation, the creation, means faithful mineral resource justice cannot be separated back into its component parts and each dealt with in isolation, it is now a holistic approach to artisanal gold mining livelihoods, as per Danielson or Nederveen Pieterse. This perspective of mineral resource justice also means that, rather than emerging from unjust situations, the three dimensions of justice emerge from a Christian God who is concerned for just resource development; for mining His way.

However, there can be no overarching, ahistorical or metaphysical meaning to applying this mineral resource justice, as pointed out in the chapters above. Specific, particular, circumstances will arise within economic livelihood situations; these are likely to arise where there are senses of injustice over the practices and impacts of mining leading to economic, environmental, social and governance concerns. Having investigated the means of just resource development through Christian mission, it is necessary to conclude with a definition of an appropriate understanding of mineral resource justice, as a final contribution to ASM development theory.

Mineral resource justice under God is a fusion of various applicable dimensions of justice – social, economic and environmental, whose ends within particular artisanal gold mining situations are prioritised by those concerned, according to the characteristics and purposes of the Christian God.

Chapter Conclusion

This chapter has drawn the previous three thematic chapters together, culminating in a nuanced concept of livelihood justice, the focus of ‘mining God’s way.’ Broadly speaking, the intentions of mining God’s way, which is concerned with livelihoods derived from artisanal gold mining, are to conform to Biblical revelations of the character and purposes (ways) of the Christian God, as pleasing to the Trinity. The chapter has also expanded upon two further expressions – just resource development (the means) and mineral resource justice (the ends), within theories of ASM development.

The means are to be pursued through just resource development, which is to be interpreted appropriately for the case of artisanal mining development in question. The setting of things in order, to promote shalom, will require divinely inspired, practical wisdom based on the values of critical holism, development wisdom and intelligent love. A Christian missional approach is preferred; an approach which is aware that there can be no justice in the situation without the flourishing of both the community and all species in the vicinity, whether now (as creation care), or in the future (stewardship). It has argued that such a mission will rely on practices based on principles of Christian love and practical wisdom. These will arise from the application of Biblical principles, and from the collective learning to be won during the development of more faithful ordinary theologies, ethics and practices of mission with East African Christian miners.

Mineral resource justice is a fusion of various applicable dimensions of justice – social, economic and environmental, as prioritised by participants in a particular mining situation. Figure Two above, represents both the concept of mineral resource justice under God, and the approach of the thesis. While the overall intention is to please the Creator of mineral resources, the ends of such justice can only be determined by

adequately and continually analysing the situation with the people involved, who are both co-developers and likely implementers of solutions.

The chapter has answered the fourth thesis sub-question, by examining those Biblical attributes which are needed for theologically just approaches towards such flourishing, as mission with artisanal gold miners.

The thesis is now concluded with summaries of the arguments derived from these conversations; and with recommendations for future research.

Chapter Eight

Conclusion and Recommendations

The thesis has expanded upon its title ‘Mining God’s Way: Towards mineral resource justice with artisanal gold miners in East Africa.’ Mining God’s way is purposed towards the practical development of shalom in the situation. The direction of the academic research was established through the link between shalom and justice, so the thesis argues that the ends (or goal) of development proposed for the situation is ‘mineral resource justice under God.’ The concept of mineral resource justice has been formulated through the foregoing arguments, based on evidence gathered in part with artisanal gold miners in East Africa. It also argued that the means to reach this end is through ‘just resource development’ and that the intention is to be faithful to the characteristics and purposes (the ways) of a just God (Psalm 81:13).

As noted in the Introduction, my quest was to ask ‘how can I, as a reflective practitioner, inform “Mining God’s Way” through research into the “is” and “oughts” of artisanal gold mining in East Africa?’ That is, the reflective part of the personal description has been taken as theorizing or theologizing, and the practitioner part has to do with livelihood practices. I observed (through nuanced ethnographic methods) the present situation as it exists, and garnered expectations as to what should promote flourishing in the miners’ daily livelihood and in their communities. Reflection has been on the ‘is’ of present practices within the situation, and on the ‘ought’ of future practices, through a framework of practical theology. This theological model starts with studying praxes in the present situation, followed by analyses, and then seeks to transform the situation through more faithful practices (Swinton & Mowat 2006; 2016).

After establishing the link to justice, the thesis asked ‘what appropriate intentions, means, and ends, of justice can be formulated from the analyses of artisanal gold mining

development observed in East Africa?’ The literature was reviewed in three sections, to find out how just resource development has already been interpreted by others. The first section reviewed existing practices in artisanal mining of the gold resource (the ‘is’ of the situation) and the proposed approach to their transformation through standards and legislation (stating the ‘ought’ of the situation). Secondly, how change in the situation ought to be done, is addressed by development, economics and justice theorists, whose concerns include values, critical holism, intelligent love and development wisdom in uplifting livelihoods. Thirdly, reviewing what justice ought to look like, according to theologians who have investigated Biblical characteristics and purposes of the Christian God, in contrast to the human response of sinful behaviour. Typically, a doctoral research thesis investigates lacunae in academic literature using evidence gained from a situation in order to critique the literature or analyse the discourse of actors and agencies in the situation e.g. Childs (2011). However this thesis is located within the situations observed, as follows.

Field work showed that outsiders, who care, are welcome by Christian artisanal gold miners in the East Africa; they may even be seen as sent by God. The hopes they generate tend to be related to better incomes for their livelihoods, but there also hopes of better mining and processing methods. Unfortunately, the Fairtrade Foundation and their local partners (one group of welcomed outsiders whose intentions are clearly based on caring), have set a number of hurdles for local organisations of miners to clear, before improved gold revenues can be realised. The evidence shows that local miners are unable to clear these hurdles for numerous reasons, some of which are elucidated in each of the thematic chapters.

In Chapters Four, Five, and Six, the four stages of Swinton and Mowat’s model of practical theology were used in sequential chapter sections, with each Stage including critical conversations that address the development of justice. The research into the ‘is’

of present practices in the situation by the miners and intervening EFT organisations were placed into Stage One. The research into the ‘why?’ of what is going on e.g. the underlying values of these actors in the situation or the economic, environmental, social and governance drivers behind the present practices were covered in Stage Two; including theories that supplement the ‘oughts’ expressed by those directly involved in the situation. In Stage Three, the impasses in the situation were theologically reflected upon. Research during these three stages enabled the intentions, means and ends of three dimensions of justice, social, economic and environmental appropriate for the situation, to be formulated. In Stage Four, some of these more faithful practices were described, with reports on those that were initially tested in the situation. None of the details found in primary field work, or the concepts discovered in the literature, and reflected upon in the above thesis, were known prior to the start of the research.

The reflections on these situations led to conclusions that there are impasses in the pursuit of social, economic and environmental justice that are dissimilar in nature and have different reasons for their existence. This understanding, in turn, leads to the ‘so what’ question; do these impasses matter? It is ultimately concluded that there is concurrence by the critical conversation partners (including me reporting on my own efforts) that justice in the situation does matter. Yet, the analyses presented here, whether by the miners, EFT organisations, through national or international legislation, or by me, have shown the difficulties in promoting justice. The tension between reflexively formulating an appropriate justice for the situation observed and the proposed practice of implementing such justice through Christian mission as development, consistently remained throughout the thesis.

The ends of mineral resource justice are to be determined through an interaction between the elements deemed significant by the miners in their particular situation and the appropriate principles of Biblical justice that can be interpreted from the Scriptures.

In any event, its end is the appropriate promotion of shalom, or the flourishing of all species, in the situation.

The means, collectively labelled ‘just resource development’, to achieve such ends, should bear in mind the likely wicked nature of the problems in a changing situation, compounded by human sinfulness. They are to be cognizant of the nature of the mineral resource, a balance between the expectations and the capacities of development, and the approaches of critical holism, intelligent love and development wisdom. The means are to be flexibly determined by both Sides B and A, within a collaborative partnership, as a practical, holistic, Christian mission for the development of artisanal gold mining in East Africa.

The intention of ‘Mining God’s Way’ is to conform to the character and purposes of the Christian God, as revealed through the Bible, through ordinary and text-based theologies. Arising from the research, theological reflections through more faithful practical wisdom should (in theory) lead to the paradigmatic transitions required for the authentic transformation towards shalom within artisanal gold mining in East Africa.

In practice (having been informed by research), both the means and the ends of justice are to be achieved in the empirical world through faithfully applying wisdom.

The research has sought to contribute academically through answering four research questions, and the next four sections assess the extent to which these questions were answered; noting the limitations of the research aims. The final section (8.5) integrates the thesis argument and ends with recommendations for future areas of research.

8.1 First research sub-question

1. To what extent do the ordinary theologies of miners regarding community behaviour inform approaches to developing social justice?

This first thematic chapter (Chapter Four) showed that the Christian miners' worries over social justice are not being met by the written intentions, means and ends of those who would intervene. This misalignment, or lack of overlap, has created an impasse in the situation, as the hopes of miners to see 'mining with God in our hearts' cannot be conceived, let alone addressed, by secular organisations who see their role as promoting social justice at work. The social justice wished for by informants is not measured by workplace targets, policies, and procedures that may lead to improved standards of responsible mining, but by off-the-job measures such as reduced clinical treatment of sexually transmitted diseases, and so on. The evidence corralled for this chapter has shown that the ordinary theologies of miners are not presently informing interventions to transform or restore social justice in East African artisanal gold mining communities. Such concerns can however, be addressed by similarly minded Christian mission partnering with the miners in future evangelistic or outreach activities, working together to demonstrate virtuous living, as the means towards social justice.

8.2 Second research sub-question

2. How do the expressed ethics of Christian miners guide hopes for economic justice in the development of their gold resources?

Chapter Five investigated the impasse arising between the miners' hopes for a relational approach to developing their gold resources towards fair trading and the bureaucratic approach by EFT organisations through auditing the miners' conformity to standards and criteria. The lack of finances within East African ASMOs lies at the root of their inability to conform, irrespective of their expressed ethics and actions. Thus the hopes of economic justice (by Valerio or MICA) cannot presently be met in the situation. Holistic Christian mission which is willing to be involved in business enterprises with

ethical miners, bearing in mind the financial risks outlined in this chapter, could promote economic justice.

8.3 Third research sub-question

3. How can present livelihood practices regarding the use of mercury be mitigated in the pursuit of creation care i.e. the flourishing of all species in the environment?

The impasse described in Chapter Six, illustrated through various practical examples, both personal and recorded in the literature, shows little likelihood of being easily overcome. The miners lack the wherewithal to develop or purchase alternatives to their use of mercury, and they cannot prepare for the looming global ban in mercury production. Thus at present, there is virtually no chance of mitigating livelihood practices of gold-mercury amalgamation in the pursuit of all species flourishing, whether by Christian as creation care, or in the general pursuit of environmental justice. While the social justice and economic justice concerns outlined in the two previous chapters may be of local concern, the uncontrolled emissions and releases of mercury into the environment are perceived as cumulatively having a global impact. As such, there is another unavoidable dimension to justice in the situation; and any Christian mission as enterprise with miners will need to promote environmental justice through providing the means to reduce the use of mercury e.g. the provision of transportable ore concentrators such as the GoldKacha.

8.4 Fourth research sub-question

4. Which Biblical attributes are needed for theologically just approaches towards such flourishing, as mission with East African Christian miners?

This fourth research question was answered in Chapter Seven by arguing for an integrated approach to the three dimensions of justice, as a fusion within the

characteristics of the Christian God. The intention of this fusion has been labelled as mineral resource justice under God, and this is to be applied appropriately for the particular case of mining development in question. Firstly, it is distinguished by the treatment of people and their livelihoods within a long term relational setting. Secondly, the argument was made for Christian mission as development, as the theologically just approach to promoting such justice. Thirdly this approach, to promoting such Biblical justice through mission, requires practical wisdom drawing upon, at least, the values of critical holism, development wisdom and intelligent love. In answer to the question, these are the attributes required for the intentions, means and ends of mineral resource justice with East African Christian miners.

8.5 Final conclusions and recommendations

The research began as an investigation into the intentions, means, and ends, of mining God's way. The thesis research question evolved to ask how analyses of artisanal gold mining development in East Africa could inform justice under God.

Three situations in the proposed development of social, economic and environmental transformation and restoration were observed between Side B (Ugandan miners, MICA members, Zimbabwe and East African mercury users) and Side A (the Foundation, Valerio, the Convention). These situations were analysed through a nuanced version of Swinton's and Mowat's model, using critical conversations 'between the Christian tradition, the social sciences and the particular situation that is being addressed' (2016:76). The practical theology model used in this study connected various concerns regarding artisanal gold mining to certain characteristics of the Christian God and extended the research into examining forms of justice, relevant for this sector. These analyses, from Christian (theological), social science (theoretical), and technical

(practical) perspectives, in turn informed the intentions, means and ends of social, economic and environmental justice under God.

The three axes of justice (Figure Two) were interpreted as converging into a fusion under the Creator God, a new indivisible understanding of mineral resource justice within the Divinity. The ends of mineral resource justice under God are measured by the restoration of shalom in the given situation and it is to be applied appropriately (intent, means, goals), usually in the treatment of people and their livelihoods (creation care) within a long term relational setting (relational justice). Its means follow the norms of the loving Christian God (*sidiq/ mispat, chesed, shalom*), in each particular case. In acknowledging this approach as one of interpretation, arbiters for justice will require the skills of critical holism, development wisdom, and intelligent love. Due to the lack of a blueprint or even precedence, any mission enterprise towards ASM development in practice will require nuanced practical wisdom for its just approach: *Sapientis est ordinare*.

The thesis has been concerned with intentions (mining God's way); means (just resource development); and ends (mineral resource justice). It extended secular concepts of social, economic and environmental justice which are presently applied to artisanal gold mining (as per examples within the secondary literature), into a fusion of mineral resource justice under God. It has done this by bringing the ordinary theologies, ethics and practices of the miners into dialogue with development and justice theorists and theologians, within the prevailing economic situation. That is without imposing standards and criteria from Side A that ignore the daily realities facing miners of Side B. Christian promoters of justice, in collaboration with Christian artisanal gold miners, are to formulate both the particular ends and the means of reaching of justice within the specific situation.

The thesis has argued that the intentions of mining God's way are to be interpreted in harmony with the revealed ways of the Christian God, where improving justice through just resource development will lead to the flourishing of all species in the vicinity. This promotion of shalom through mission, should lead to a mineral resource justice appropriate for situations where God has blessed communities through minerals that are won by artisan miners. Based on interventions already initiated, the thesis has argued for practical theologies valuing critical holism, development wisdom and intelligent love. In summary, while the overall intention is to please the Creator of mineral resources, the means and ends of such justice can only be determined by adequately and continually analysing the situation with the people involved, who are both co-developers and likely implementers of solutions.

The thesis has answered the quest for the intentions, means and ends of an appropriate justice under God for the livelihoods of artisanal gold mining communities; and is the first academic study to do so. The research has made contributions to personal phronesis; to Mining God's Way as future mission; and to ASM development theory.

There are numerous studies, from secular perspectives within the social sciences, of the human activity of mining at any scale, including the religious beliefs and ritual practices of miners, the world over. The artisanal gold miners in East Africa are mostly Christian, which allowed my approach to the research. This thesis has opened possibilities for wide ranging research into *missio Dei* and its application in mining through overtly Christian theological perspectives. In pursuing an overall concept, mineral resource justice, much can be researched more deeply. For example, within the artisanal sector alone, each dimension of justice should be researched further through the prevailing ordinary theologies of Christian miners in other situations to supplement the work done here. This has not been a study into comparative theologies or showing how the ordinary livelihood theologies, ethics and practices of miners can inform

subjects found in the literature, but how the praxes of miners, along with other findings in the literature, inform the future intentions, means and ends of practical mission. Any of these aspects can be fruitfully researched and contribute to specialist knowledge within appropriate fields of religious study. Finally, the ASM academic research community will be welcome to study the results of Christian mission as development in the East African artisanal gold mining situation.

Appendix One

Artisanal gold mining livelihoods in Migori County, Kenya

This Appendix continues to describe the economic livelihood practices started in the Introduction. It follows Stage One of Swinton and Mowat's model (2016:89–91), where the miners themselves 'attempt to make some initial sense of what is going on, why things are structured in the ways that they are and why people function in particular ways' (2016:91) and familiarises readers with this sector of mining.

While discussing the material culture of the Luo, A.B.C. Ocholla-Ayayo noted that

Any given social group is related to their natural habitat by means of tools, techniques, production organisation and rules of conduct governing property rights and the relationship between the members. These are also united by beliefs of themselves as a distinct member of the human group that forms a certain historical entity. (1980:3)

These comments are also true of artisanal miners in East Africa, as will be shown in this Appendix. It is out of this group operating within particular situations near the shores of Lake Victoria that the thesis makes its contribution to resource justice therefore a clear description of their created livelihood provides guidance for the research. These descriptions form the foundation of the thesis including the selection of literature reviewed. The descriptions of artisanal gold mining, processing and sales as livelihood which were investigated during the research project have been assembled from information given almost invariably by miners in Migori County, Kenya interviewed during fieldwork in 2015 and supplemented by personal observations. These are informants' descriptions, solicited by asking open-ended questions regarding their understanding of local artisanal gold mining practices. While the interviews and responses were in English, one informant, John Asembo, helpfully translated a few Luo and Swahili mining terms which are in common use (Asembo 2015).

George Okoth notes that getting a job in Kenya is not easy. 'If you look at the number of people who are doing artisanal gold mining, they are very many. So it

provides job opportunities for many people including myself; that is the most important thing with it' (Okoth 2015). John Asembo believes 'artisanal mining is the main source of livelihood for this community. I found myself being an artisanal miner; my education came through artisanal mining, my father used to do it. We do it like a lifestyle, it is a livelihood' (Asembo 2015). More poetically Duncan Onyango maintained 'They say that every valley has its lilies; and our lily here is gold and also sugar cane' (Onyango 2015). Peter Alimu said 'artisanal mining is getting access to the gold ... by knowing what rocks bear it, removing these rocks, processing them and then extracting the gold itself for the market' (Alimu 2015), already noted in the Introduction. These sequences of activities (rock removal, ore processing and gold extraction) provide rubrics for the occupation of artisanal gold mining which will now be described further.

Section One: Hard Rock Mining

There were three forms of accessing gold observed in East Africa, all of which follow the same form of processing. Firstly, river bed mining where 'one will identify a place where gold particles are and they will scoop the sand and just wash it' (Onyango 2015) but alluvial mining is not investigated further in this project. Secondly, underground mining either through shafts in hard rock (Tanzania and Kenya) or in large holes up to twenty metres deep in decomposed rocks and soils (Uganda). These operations, once deeper than the water table, require ground and rainwater to be pumped out. Thirdly, the reprocessing of tailings dumps to further extract gold usually by mercury if done by individuals and less frequently by cyanidation, if done as a business. Only the mining and processing of hard rock, and retreatment of tailings, which use mercury are sequentially described below.

George Okoth explains:

Everything that I have is out of artisanal mining. This is a kind of mining where we dig rocks underground which we believe have some gold. We just do it locally using some chisels (*ponch*), some simple tools, we normally use our hands. Mostly we depend on manpower, the only machines

we use may be simple water pumps and compressors for drilling (*rongo*) hard rocks. We drill in two types of rocks, one that has gold (reef or *mali*) and one that doesn't have gold, we call it *sist* (schist or *tope*). After drilling it we blast the *sist* and take it out first and after blasting¹ we can continue digging the reef using our chisels. (Okoth 2015)

Maurice Otieno adds:

We don't have big machines we have small machines, water pumps. We use explosives (*baruti*) in a small scale and we use compressors but where there are no compressors we use our energy. Everything is being done in small scale. One hole² (shaft or *saft*) can produce 1 ton a day but we measure it as 40 *troughs* which makes 1 ton³. Sometimes one trough can give 2 grams, it can be 80 grams in one day. (Otieno 2015).

Also in the holes, according to Okoth:

When we are underground there is danger of falling rocks so we need to support the walls of the *saft* down so that any rock cannot fall on someone, it's for safety. Normally when we blast the schist we have to send the guys for timbering (*fundis*)⁴ to check if it is safe to continue working. If the advice is we must timber before any work goes on then we have to do that. When the rock is that weak, after every blasting we have to do the timbering then we have to spend a lot of time and we spend like Kshs.30000⁵ for three months on buying timber. (Okoth 2015)

Timbering along these lines was observed during the fieldwork in all three East African countries, as was the manual removal of mined rock 'using people, manpower, we use *troughs* to move the blasted materials to the bottom of the shaft' (Okoth 2015). Duncan Onyango maintains 'It is very tiresome' (2015) and George Odhiambo wishes for a windlass in the shaft to hoist the ore:

Walking with a trough that could weigh 25 kg or 10 or 20 kg squatting as you come all the way from the end where ore was extracted to the shaft where you are supposed to at least find a *pulley* to take it out. (Odhiambo 2015)

At K'Achieng mining site the reef is placed in sacks which are attached to a rope dangling from the surface and the sacks are pulled up using a simple hand turned windlass or *pulley*. The miner climbs alongside to ensure his sack does not snag on the shaft timbers. Once outside the shaft the contents are poured onto a metal or wooden

¹ Chapter Five deals with the legality of using explosives and blasting rocks in Kenya.

² Bugo – hole (Odaga 2005a) hence donjo bugo- descend into the ground); woki bugo – come out.

³ i.e. about 25 kilograms per trough totalling a maximum of 1000 kilograms or 1 metric ton, depending on the number of chisellers (*japonch*) underground at any one time. These numbers are strictly controlled by Okoth using a register to record the names of those allowed underground for any one shift on a rotational basis to promote fairness in accessibility to the ore underground. Those men (*jabugo*) sitting near the shaft whose names were not called out, left presumably to return another day. The fifteen or so others strapped on torches, grabbed their tools and quickly descended (*donjo bugo*).

⁴ 'An artisan or skilled workman' (Odaga 2005c).

⁵ Using an approximate exchange rate from dollars to Kenyan shillings of 90: 1 (then current), this is about US\$333.

tray and are divided visually into 3 separate equal piles of stones and mud under the watchful eye of a ‘soldier’ or security guard.

Normally we do it in the ratio of 2:1 where one goes to the miner, two taken by the manager. From these two, one is for expenses in the shaft like timbers, pumping water and one is for the owners use. They understand that. Even the soldiers are paid from this ratio that we remain with. (Okoth 2015)

This division of the original ore serves the purpose of financing the upkeep of the mining site, paying for the diesel used in generators that supply electricity to pump water, timbers and the labour of the *fundis* involved. Gold occurs sporadically in the reef causing invisible fluctuations in the amount of gold contained and each miner removes only tens of kilograms of rocks in a day. The risk of more or less gold, invisible in the *trough*, is shared between the parties when dividing up the ore whose worth is only known after processing. Although the miner is generally given one third and the other two are retained by the management this ratio changes to favour the miner when the ores are more barren. Nevertheless this ore sharing is not without some resentment as a miner complained:

Fairness is not being felt between the mine owners and the labour in terms of sharing out the produce. If I am given the opportunity to get down in the shaft, whatever material I come up with is (should be) mine and mine alone. (Anonymous 2015)

And yet the costs of shaft upkeep and ‘equipments like water pump and pipes, electrical wires, control units and generator’ listed by ‘Boy’ Ochieng (2015) as well as purchasing explosives, compressor hire and blast hole drilling at Kshs 1000⁶ per hole (Okoth 2015) must be met. At the end of the day when each of the miners has extracted what they can individually carry the hoist rope is removed and a hinged horizontal gate is lowered and locked to prevent unsupervised re-entry and ore theft. ‘From there we take whatever we have now for processing. So it’s doing mining in a simple way not an advanced way’ (Okoth 2015).

However if a good patch of reef is mined, word gets around and soon ore buyers, usually women, arrive at the shaft offering cash to miners who in seeking to avoid the

⁶ At an exchange rate of 90: 1 (then current), this is about US\$11.10 per hole.

further hard work of processing may sell their day's work for an agreed sum. One informant, Rosemary Ongang'o, shared that her income was generated through buying ore and processing it. First searching for the rocks then 'carrying them on your head' from 'one to another venue' which makes you 'use a lot of time in transporting the rock from where you have gotten it to the processing point' so it can take 'up to six hours to process one trough' (Ongang'o 2015).

The waste rock is either left underground or brought to surface and dumped in the environs of the shaft or sadly, as Ongang'o shares, sold to unsuspecting women as ore:

Maybe you can get dis-honest men from the holes. They come out with *matope* the waste and they can be so challenging and say "this one is a good one, it has more gold" you buy it but when you go to process it at long last it has got no gold. There is nothing coming out, it is a problem for us as women because we cannot get down to the holes, they come with the waste and we are processing it. (Ongang'o 2015)

Work underground is dangerous with no pre-knowledge of the gold contained as a reward for the risks involved. While there are cases of exploiting ore buyers, the main gamble is that a day of hard work may not yield much gold. Hence the weight of gold that can be sold is measured in as little as tenths of a gram, approximately one millimetre in diameter. In financial terms, a tenth of a gram was worth approximately US\$3-4.

Section Two: Ore Crushing and Milling

Otieno describes the beginning of processing 'After we have divided, each and every one will take his trough to the crusher mill where these things are going to be crushed' (2015). Older women and young men sit on the floor and 'using a hammer (*nyondo*) to make it into small pieces like one inch for the mill crusher, then we pour it there' (Asembo 2015). In former times:

People are using the hammers, 6lbs, 8 lbs, they go crushing these stones, putting the stones in between the legs, the stones are being hit. They were using just these hammers to crush the stones into fine soft powder. I could see these people's nostrils full of dust. (Onyango 2015)

Alimu notes that:

As you used the hammer you inhaled quite a bit of dust. But now we are safe and time taken is short. That is one of the improvements in gold mining, we are moving from manual to mechanical, we process the rocks with some modern machinery. (2015)

Julius Opiyo believes that there are now over 200 ball mills (*rego*) around Migori County (Opiyo 2014) that do this work of grinding the rock into powder. They are powered by diesel engines via a rubber belt which can be tightened to drive the mill or loosened to stop it rotating. During rotation the steel balls inside the eight-sided container and rocks fall against the manganese steel plates that line the inside of the mill, further crushing and milling the rocks. Initially the mills are very noisy but as the rocks are pulverized the mills become more muffled, the operator (*jarego*) hears this change and suitably stops rotation. A hatch on the side of the mill is opened and the finely ground material pours out into the *trough* beneath also releasing quantities of dust. The balls which are rejects from industrial maize mills, and are bought second hand, are retained in the mill by a metal grid but as they wear further, they deposit iron filings into the powder. Mills are privately owned and payment is made per *trough* usually ground one at a time to keep the contents discrete. As well as using diesel, these mills require regular maintenance especially the welding of worn plates, broken axles and so on requiring the expertise of *fundis*.

From the above descriptions the work of artisanal miners, whether men underground or women on surface is hard. Be it carrying sacks or troughs from one place to another, even before hammering rocks into smaller sizes for further processing such as milling, the work is physically demanding and tedious.

The next steps in the process are labelled ‘concentrating and tailings treatment’ (i.e. sluicing) and the field work descriptions have been placed in 6.1.2.1. These are followed by the steps of ‘panning, amalgaming and heating’, described in 6.1.2.2

Section Three: Selling Gold

Asembo noted that the words for selling gold in Luo *mali mochiek* mean gold ready for use⁷ and the burning of amalgam is the last step in processing gold prior to its sale.

Informants who should remain anonymous noted that

We have so many people dealing in gold those who are buying from us; middlemen, we just go and sell, there are so many doing that. But if you have a large quantity of gold you can decide to go to the bigger dealers, those who are exporting, we have some in Migori. Kisumu, Eldoret even Nairobi. Those people pay a better price than the middlemen around. (Anonymous2 2015)

Another described himself as ‘an agent who collects and takes our gold to the middleman. We go into Migori to find them’ (Anonymous3 2015). This helps explain Ongang’os earlier unhappy description of men with many grams going to Migori, yet coming back with nothing for their families.

All miners observed carry cellphones and can be aware of the daily ‘fix’ on gold prices through the internet, so local buyers are held to some degree on prices offered. Anecdotally, it appeared to be common knowledge when the international price paid for gold dropped, as it was discussed openly where miners gathered. However, as the thesis is concerned with the livelihoods of miners, the onward traffic of gold after it is sold by the miners is beyond the research.

Appendix One Conclusion

This appendix has served to introduce a sample of the artisanal and small-scale mining sector observed, a thin slice of a massive global phenomenon which provides income to millions of people. These descriptions of artisanal gold mining as the livelihood for the people of East Africa have been taken from the field without comparing them to those found either in the EFT literature purporting to develop the sector or in the scholarship that abounds from other researchers. That task falls to the analytical chapters – the role

⁷ mochiek –ready for use (Odaga 2005d)

of these findings has been to allow the community itself to articulate their practices and situation, to build the stage as it were, in which the thesis is set.

In Chapters Four, Five, Six and Seven, the pursuit of these livelihoods is shown to have social, economic and environmental impacts and these ultimately lead, in this thesis, to matters of justice under God and to Christian mission promoting shalom in the situation described here.

Appendix Two

Supplementary Notes regarding Fieldwork

The following sections add to the field work information used in thesis chapters. The roots of the research start in Zimbabwe where independent diggers (known locally as ‘madhoba-dhoba’ miners) mine chrome ore from unused deposits or remnant dumps and sell it to ferro-chrome smelters. Their subsistence level (and apparently unsafe) activities disturbed me as a Christian, a mining engineer and Managing Director of Maranatha Ferro-Chrome, provoking me to propose a holistic response to this form of artisanal mining. Conversations with another Christian, Brian Oldreive (who pioneered an approach to help peasant farmers in Zimbabwe, now known there as ‘Foundations for Farming’)¹ suggested this response could be labelled ‘Mining God’s Way.’ However, it never got beyond conceptualisation, as the economic situation in Zimbabwe deteriorated forcing the closure of Maranatha’s smelter. Nevertheless, the research project remains an enquiry into what may constitute mining God’s way (Garde 2010) as a basis for holistic development of artisanal mining livelihoods in Africa. My personal history in Zimbabwe, my past as a captain of industry would not allow me to be seen as an academic researcher there (other than one short visit in 2012) and, through Dr. Ontita, East Africa was chosen instead.

¹ http://foundationsforfarming.org/new/?page_id=6727 accessed February 2020

Section One: Research during the Scoping Visit

As mentioned, the scoping visit was expected to provide insights into the location, people and systems prior to applying for a permit to do research in Kenya. Also, in attempting to understand fair trading in gold I acquired the Golden Vein questionnaire off the internet, and just prior to leaving for Kenya in November 2011, approval to use it was granted from the Alliance for Responsible Mining (ARM). During Valerio and MICA's activities, Odhiambo and I visited mining operations around the county, which showed that local mining was below the level of organising required by ARM's expectations, as measured through their questionnaire.

Another issue which emerged during the 2011 field trip was its influence on future fieldwork with MICA. While travelling with Valerio made introductions to the Co-op and visits around the mines easier, in hindsight this relationship muddied the waters of neutral research. Having this happen during this initial visit was probably opportune; as opposed to later in the research, from which it may have been more difficult to recover. The gold buying saga drew me in, given that I had been seen in the company of both parties and this called for some reworking of the fieldwork design with a view to doing my research without any confusion as to my intentions. So, I returned in 2014, strongly insisting that I was purely there to learn, to investigate the wellbeing of MICA as a miners' organisation and that I had no money or capacity to invest in the co-op.

Resulting from the first (scoping) visit with Valerio, I was also unsure of the ethical health of MICA as an agency for a developmental role in fair trading and wanted to research this during my second and subsequent visits. I discovered during the 2014 visit that, in spite of my preparations, the concept of wellbeing of organizations could not be easily grasped by informants. My explanation of the pre-fieldwork questions invariably directed the answers given by the first few respondents towards affirmation, contrary to the experiences of the 2011 visit, recounted above. Remembering this experience, I still

wished to further investigate the espoused ethics of MICA's Executive Members, and informants were interviewed, instead, through open ended questions regarding their knowledge and opinions about the history, present state and future of the co-op as an ASMO. At the same time I learned about the daily livelihood practices of artisanal miners in Migori County, Kenya as per the phased movement from observer to participant outlined in Chapter Three.

Section Two: Zimbabwe, May 2012

Report on GoldKacha trials

These trials were conducted between 7th and 18th May 2012, in order to examine the claims by the manufacturer, Appropriate Process Technologies (APT), that this equipment can replace (or displace into a controlled environment) the use of mercury in gold processing by Artisanal and Small-scale Miners (ASM). A visit to visually compare alternative technology was made to a typical central gold milling plant near Chegutu consisting of two stamp mills each feeding a separate simple centrifuge concentrator, marketed in Zimbabwe as the Querl Bowl:



Gold milling plant near Chegutu



One of the two stamp mills



A simple centrifuge concentrator

The GoldKacha (GK) was transported 140 km from Harare to Kadoma, to be closer to the ore supplies, and was commissioned for trials on site by agents from APT.



The GoldKacha is easily transported

The GK consists of a 3mm screen above a rotating plastic bowl with ribs, powered by an electric motor through a gearing system:



The major parts of the GoldKacha

Treatment of slag containing gold

The trials were conducted on crushed slag from the dumps behind the Empress Nickel Refinery and on gold from 3 sources, the Inez Mine, the Motor Mine and the 3 Cheers Mine (which was not assayed). This site had supplies of water and electricity at the correct voltage (220v); an immersible pump and front end loader bucket for re-circulating water (see picture below), a scale for weighing the samples, overnight security and lockable store, wheelbarrows, shovels and labour. However, this meant we could not access unlimited amounts of ore feed, which had to be brought to the site in sacks. It was expected, from prior sampling, to find some gold in the slag dumps, and the GK pulled out four particles as shown.



Feeding the GoldKacha with bagged ore feed



Typical particles of gold



Treatment of slag containing gold

Treatment of gold ores



The milled ore being screened and fed into the bowl below by running water



The centrifuge bowl spinning, bubbles from the liquid soap.



The stationary centrifuge, with concentrate packed in the ribs.

Inez Mine:

The ore had a very low grade of contained gold, less than 3 grams per ton, but we wanted to see if any particles were pulled out by the GK and the following photo shows one much smaller sized particle removed:



A small particle of gold

3 Cheers Mine:

The ore was fed in two lots of about 45 kgs each, under two conditions: i) low ore and low water feed rates and ii) high ore and high water feed rates. The ore owners did not want samples taken for assay, but were pleased with the quantity and grain size of gold particles (down to 75 micron) that was recovered, stating their own methods of panning and amalgaming would have recovered less gold. They believed the gold particles (dust) shown below would weigh seven tenths of a gram, once separated from the iron filings (dark particles):



Gold dust particles with iron filings

About 3 to 5% of the feed reports to the concentrate, but is very contaminated by iron filings worn off the stamps (within a stamp mill pictured below) during milling.



These filings are removed by a magnet:



Once the iron is removed, the remaining fine particles of gold 'dust' are shown:



The artisanal gold miners were particularly impressed by the GK and said they would be happy to support a milling plant that included one. Off the record, the central milling plant manager feared that the GK recoveries being so good, would further reduce the operating profit margins of the plant. That is the much reduced tailings grade for cyaniding of gold would leave the plant to get most income from milling; where rates charged are half a gram per hour.

Observations and Comments

Due to the small sample quantities we were unable to process ores for any length of time beyond a few minutes, and were thus unable to prove the manufacturers claim of the GK's capability of treating 1 to 3 tons per hour.

Availability of water for the centrifuge is important, and it appears to use about 1 ton of water per ton of ore processed, however this can be recycled through a sump and pump as we did. The manufacturers expect the GK to use water at the same rate we observed, i.e. 2-3 cubic metres per hour. In order to ensure gold particles are not carried off on the surface of the water through surface tension, an amount of liquid soap from a squeeze bottle is added to the water as it washes ore through the screening process.

The GK substantially reduces the time spent panning for concentrates, and coupled with a second type of gravity concentrator, the Gemini Table, no labour intensive, time consuming panning is necessary at all. Whilst this equipment was not tested, a video showing it in operation can be seen on YouTube.

The GK only works on free gold particles that have been liberated either through weathering into soils or riverbeds or through crushing of mined rock. In the case of western Kenya and what was seen in Zimbabwe, crushing or milling of the rock before passing through the GK is necessary. Any gold held within the rock or in combination with other minerals will still need to be dissolved by and reclaimed through a cyanide process treating the tailings (or waste) downstream from the GK, which can be done in a controlled manner.

The GK system suggests that a concrete slab is poured for the equipment (particularly the shaking table) to rest on and a water tank (pond) to allow for re-circulation of water is likely, unless near a river.

Other recommendations by the manufacturer are:

1. Try to get a steady feed for the GK
2. Keep loading until a tail of gold particles appears in the pan
3. It is better to treat one ton with a grade of 30 grams than 30 tons with a grade of 1 gram per ton!
4. Try to get the ore as well milled as possible, even the screen size of minus 3mm is still too coarse.
5. Gold grain size of plus 75 micron is best, below 50 micron the gold is invisible (see photos)
6. The concentrate needs to stay in the grooves as long as possible after feeding finishes, a further 5 to 10 minutes.
7. Water should be fed at 50 litres per minute
8. Liquid soap for breaking water surface tension
9. The system should have re-circulating water
10. Compared to the Querl Bowl, the GK bowl has steeper sides, spins faster and has a different rib layout; disallowing the addition of mercury into the centrifuge
11. The spinning effect increases the mass effect by a factor of twenty.

Conclusions and Recommendations

The strengths of the GK are that it is simple; can be operated by unskilled people; relatively inexpensive; very mobile (4 persons to lift and carry off the back of a typical pick-up truck); mercury proof; gathers fine gold particles and the company offers some kind of back up service. The weaknesses are that it requires water (about 1 ton per ton of ore, which can be re-circulated) and electricity (a generator) to power both the GK and the pumps. The opportunities include that it can be coupled downstream with a shaking table and a small furnace; that can be the centre piece of a central milling plant behind a small ball mill or fixed stamp mill. Threats to its use include human greed;

competition from the cheaper Querl bowl coupled with mercury; unknown (at present) rates of wear; and irregular electricity supplies if relying on national power grids.

A central milling and concentrating plant using an appropriate mill; the GK; and a pump driven by petrol (or diesel) motors constitutes the minimum plant. Where the national power grid or generator are available, the addition of a magnetic separator; a GT and requisite water reticulation; is a feasible next step. This would constitute a central gold processing unit and the gold would remain in the ownership of the miner or organised group of miners who pay for its use at a rate of at least ½ gram of gold per hour (as is the fee for the stamp mill and Querl Bowl shown in Zimbabwe).

For traceable (fair) trading, a number of these mills can be linked into a small gold furnace to either melt or smelt (burn off contaminants in) the gold dust and produce *dore* gold buttons or bars for direct export to foreign customers. It is likely that this technology would form a separate business, probably a joint venture between a certified gold trader and local businesses. The gold would change hands and be sold to the joint venture before being turned into dore, hence the need for it to be in a safe location, with access to banks for money and secure transport to the nearest airport for exporting to the certified customer/ refinery.

The entire system is mercury free, ‘green’ or ‘clean’ if we take the concentrates from the GK to the shaking table and onto smelting. This can be accomplished in a central gold processing unit.

Section Three: Tanzania, June 2014

There were two major findings here. Firstly, there was likely to be a positive reception to the GoldKacha by artisanal gold miners based on the videos of the equipment shown at the ‘End of Year Two Project Workshop’ held by Fairtrade Africa in Geita. This encouraged me to continue working with Valerio (who was also present at this event), to make the equipment available to one or more East African ASMOs. Secondly, the

mercury retort, proudly shown to the delegates from abroad such as me, had not been used in a long time, if ever. There was a major disproportion between the size of the beads of amalgam, less than a millimetre across (as per the photographs from Zimbabwe in Section Two), and the large bowl of the retort, about one litre capacity.

Also, during this event I met the management of EWAD for the first time, which was to prove important for later field work in Uganda.

Section Four: Migori County, October – December 2014

I stayed in the Nairobi home of Dr. Ontita and his family at the beginning and end of the field trip. In the few days after my arrival in Kenya, Dr. Ontita organised the research permit from NACOSTI and introduced me to his colleagues at the University of Nairobi, including a Luo anthropologist, Dr. Onyango. I was able to use the Jomo Kenyatta Library to do further research into the Luo people and the 2013 Migori County Development Plan. I also met with the CEO of the Kenya Community Development Fund (KCDF) in Nairobi before returning to the UK.

In Migori County, I stayed at the Macalder Catholic Mission station, as a guest of Fathers Jacob and Moses (who I had met during the scoping visit in 2011). They were both interviewed, as was Sister Rose from the nunnery on the property, for their opinions on the impacts of artisanal gold mining. Other officials interviewed (but not digitally recorded) included an Assistant Chief; a Chief; a Luo Elder; an Education Officer; and the Migori County Government Minister of Environment, Minerals and Disaster Management. In terms of experts, I held a focus group with four men responsible for using explosives on mines in the area and I observed two different blasters at work underground and interviewed them later. I watched underground timbering by experts making the workplace safe, as well as the drilling of blast holes underground by expert machine operators. I went underground 8 times, once down a

shaft in Osiri, the other times at Ka'chieng, to observe mining practice by ordinary miners using chisels, as well as using a tape to draw a survey plan of the underground workings. I also did a tape survey of the surface property held by John, mapping the shafts, open workings, buildings, ponds, crusher sites, and so on; I used GPS to locate the boundaries of the mining claim, should he need to register it. I spent at least 20 days observing the surface operations of crushing, sluicing, panning and amalgaming. Three full days were spent in Onyango's workshop brazing and testing the small retort.

I interviewed and recorded Odhiambo for 4 hours and 12 minutes over three meetings on different days, Opiyo for 4 hours and 38 minutes over one day, and Asembo for 2 hours and 35 minutes one Saturday, learning about the history, expectations and frustrations of MICA. I also held four focus group meetings with various members of MICA, taking written notes, the last of which was also audio-recorded for 3 hours and 12 minutes.

There were lighter moments when I could reflect and be descriptive as this example from my field work diary, written on 24 October reads:

'The field work got launched officially on Tuesday when I showed my credentials to the Sub County Commissioner and the Sub County Education Officer, so protocol was kept. The former was in a Government style office just like any District Commissioner's office in Zimbabwe, with whom I was called up to do my national service . The latter was in the old Macalder Copper Mine offices, in fact it would have been the Mine Secretary's office, as a safe was still built into the wall! Strange throw-back memories, all around!

Later I had my first meeting with three guys from the Migori County Artisanal Gold Miner's Co-operative Society Ltd or MICA for short. Needless to say I never saw all three of them at the same time, sometimes it was just one, at most two. Their mining sites are clustered here in Nyatike sub county about 8 k away, 6 as the vulture flies! The

road winds steeply down to cross the muddy fast flowing Migori River on a single lane bridge, then up the other side of the valley, which is a bit scary when in a matatu (local taxi) or on the back of a motorbike, my other way of getting around the locality.

I spent Wednesday and Thursday visiting the Ka'chieng mining site of John Asembo, one of the three MICA members. On my arrival there John pointed at one of the shafts and suggested I go down straight way, but I baulked, a minor panic attack looking into the vertical blackness of timber frames with the occasional rung across one corner. 'Ah, No!' I exclaimed using the excuse that I had was not wearing the right clothes. Instead he showed me around the surface activities of crushing, milling, and sluicing, as well as the five other 'holes' (their name for shafts), all with hand windlasses for raising ore and waste in sacks and lowering timber for making travelling ways in the mining areas (stopes, in mining parlance), with lockable grid covers to keep out robbers.

However on Thursday I had fortified my nerve, put on boots, borrowed a hard hat and a torch and was raring to descend! On the way there I had seen a vervet monkey and a flame lily in full colour growing on the side of the road and decided these were good omens. Sure enough I descended like a monkey, an old stiff crotchety one, admittedly, but soon I was back in a world I know something about, down a gold mine, a 'small working' as they were known in my day. Like me, it was old school: narrow stope, dipping almost vertically, a quartz stringer containing visible gold particles against the hanging wall, hard country rock not prone to peeling away, not making much water, timbered platforms and props acting as ladders to get to the working 'faces'. But whilst the men were dressed in hard wearing clothes and shoes and had torches strapped to their heads above their right ears using elastic bands made from old car inner tubes, no one had any protective equipment.

After 8 to 10 years I was back underground, and the flame lily, representing day light and the world above, was there to meet me 90 minutes later, as I climbed carefully

upwards. Not only underground, but I also watched other people doing their tasks and their skills were apparent, these were truly artisans at work, all done by eye without the usual paraphernalia used in winning gold.

In conclusion it is a strange experience, to be on a learning curve, doing research in situations that are both new and familiar at the same time. Who said nostalgia isn't what it used to be?'

Chapter Three has outlined the four phase approach I took moving from observer to participant in the eyes of male miners underground and females treating tailings dumped on surface. The other major concern of this trip was to assess the state of MICA in the light of the scoping visit made three years previously.

Section Five: Migori County, June - July 2015

In the three weeks between Monday 22 June and Sunday 12 July, 15 interviews or focus groups were conducted with 8 different participants and were recorded, totalling 17 hours and 17 minutes. Extracts from the transcriptions resulted in the descriptions of artisanal gold mining livelihood placed in Appendix One. Three of these participants, Odhiambo, Asembo, and Opiyo who had been recorded at the end of the field work in 2014 were included in these interviews, updating me on the state of MICA.

The last few days were spent at the Migori County Dream Hotel at Fairtrade Africa's 'End of Project Conference' held from Monday 13th to 15th July. Here a number of talks and contributions by delegates were recorded, totalling 6 hours and 55 minutes, including an interview with James Mwai, a senior manager with Fairtrade Africa. I travelled back to Nairobi on a bus with Mungai and another senior consultant with the Fairtrade Foundation who interviewed me on the way forward for their next round of fundraising. I suggested, based on my work with mercury-free gold processing, that

they should focus on supplying equipment to ASMOs, and this recommendation was partly adopted through what was to become the Impact Facility.

Section Six: Uganda and Kenya, April 2016

Valerio and I flew to Entebbe, Uganda where we were met by members of EWAD. They had known of my commitment to mercury-free processing since the meeting in Tanzania in 2014, so I was no stranger in assisting them, and CRED Foundation, to acquire the same equipment they seen then, in videos. The next day we retrieved the GoldKacha and two manufactured sluices marketed as GoldMastas that had recently been delivered from South Africa to Kampala. We drove for four hours to the Busia gold mining area on the eastern border with Kenya, near Lake Victoria. At the mining site of the Syanyonja Artisan Miners Alliance (SAMA), we were met by representatives of three ASMOs with whom EWAD has been working and began assembly of the equipment, using an electrician to wire the motor to the generator.

Simon Wabwire, from SAMA who went to Geita, Tanzania for training on the equipment the previous month had a very good idea of what everything should look like and was correctly confident that between us we could make it work, using tailings from a nearby dump. After 20 minutes we stopped the machine, and once the concentrate was panned, there was excitement over the tail of gold particles in the basin. The onlookers reckoned we pulled another 1 gram out of what were considered absolutely exhausted tailings, having been processed manually, possibly up to ten times.

The next days were spent concentrating ores and freshly re-ground tailings brought in by the ASMOs. According to Valerio ‘As a result gold retention saw a 4-fold increase, and the time taken to extract that gold reduced from a day’s worth of panning and re-panning to just one hour using the machinery’ (2016). Another report in the popular media noted that ‘As well as being environmentally friendly, the GoldKacha

recovers 95 per cent of gold from the ore processed. Before, as at other mines, only about 35 per cent was recovered' (Kelly 2016:39–40). Several miners came together to use the equipment, and so there is potential for increased aggregated volumes. On the last day, local dignitaries including the District Chairman arrived to participate in a hand over ceremony where the GK, now housed under a roof, was given to the 3 ASMOs to manage through a committee.

Early the next day, I recorded an interview lasting 51 minutes with Margaret Tuhumwire, head of EWAD about her relationship as a project partner with Fairtrade Africa, based in Nairobi. Then Mungai, and I drove to Kenya, and during the car journey I interviewed him regarding FTG expectations for a total of 69 minutes.

We arrived in Migori and, over the next days I met with members of the MICODEPRO Development Group, another ASMO, who had hopes of certification, and visited their mining sites; these meetings were not digitally recorded, I took written notes. I also met with Odhiambo (recorded for 1 hour and 28 minutes), and visited the cyanide plant erected on Asembo's site by an outside investor. After two days I travelled onto Nairobi with Opiyo, recording an interview with him for 1 hour and 33 minutes during the bus journey, before returning to the UK.

Section Seven: Uganda, February 2017

I only felt ready to enquire after the Ugandan miners' understanding of God's role in their livelihoods during my final field trip, i.e. it was only after I was more competent as a mining engineer and economist at this scale of mining, that I enlarged my research into mining God's way from a theological perspective. In Oxford, Irim Sarwar helped me compile the research questionnaire, and I produced the consent forms, before contacting EWAD for their help.

As well as trialing a completely mercury-free processing system, which produced some grams of gold but proved unsustainable, field work towards the contents of Chapter Four was conducted: three focus groups (totalling 4 hours and 49 minutes) were held, along with four other face to face interviews with individual miners (totalling 2 hours and 52 minutes) and Joshua Read was interviewed for 61 minutes. These findings could possibly have been made into the entire thesis as a contribution to theological knowledge, however the broader research into justice required findings from the full suite of field work.

Appendix Two Conclusion

In terms of interaction with informants, the research evolved over time following the four phases of moving from observer to participant as outlined in Chapter Three. Initially the research was into the experiences of the miners gained through their daily livelihood, eminently practical. This was to enlarge my own experiences as a mining engineer, who had some prior knowledge of the geology, mining practices and such equipment as the GoldKacha ore concentrator.

All the field trips included aspects of my knowledge and experience, placing me squarely as a Side A representative, but initially I was very inexperienced in the mining and processing practices of artisanal gold mining. The ten weeks spent in 2014 were instrumental in exposing me to the constraints (e.g. in acquiring explosives); the skills and competencies required; and to the generous hospitality of the miners. The thesis builds on the practices observed and described by the miners, as well as the responses from Christian informants (women and men) regarding their perspectives on their livelihoods.

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